

# Service Manual

Computer Drive New Class A  
Stereo Integrated Amplifier

Amplifier

## SU-V10X

Color

(K).....Black Type



Color	Areas
(K)	[D] .....Scandinavia
(K)	[EF] .....France
(K)	[Ei] .....Italy
(K)	[EW] .....Switzerland
(K)	[EK] .....United Kingdom
(K)	[EH] .....Holland
(K)	[EGA] .....F. R. Germany
(K)	[EB] .....Belgium
(K)	[XA] .....Southeast, Asia, Oceania, Africa, Middle Near East and Central South America
(K)	[XL] .....Australia

## SPECIFICATIONS

(DIN 45 500)

### ■ MAIN AMPLIFIER SECTION

(Input Signal: EXT. INPUT)

1 kHz continuous power output both channels driven	2 × 120W (4Ω) 2 × 120W (8Ω)
40 Hz~16 kHz continuous power output both channels driven	2 × 120W (4Ω) 2 × 120W (8Ω)
20 Hz~20 kHz continuous power output both channels driven	2 × 120W (4Ω) 2 × 120W (8Ω)
Total harmonic distortion	
rated power at 20 Hz~20 kHz	0.007% (4Ω) 0.003% (8Ω)
rated power at 40 Hz~16 kHz	0.007% (4Ω) 0.003% (8Ω)
rated power at 1 kHz	0.0015% (4Ω) 0.001% (8Ω)
half power at 20 Hz~20 kHz	0.002% (8Ω)
half power at 1 kHz	0.001% (8Ω)
Intermodulation distortion	
rated power at 250 Hz: 8 kHz=4:1, 8Ω	0.01%
rated power at 60 Hz: 7 kHz=4:1, SMPTE, 8Ω	0.007%
Power bandwidth	
both channels driven, -3 dB	5 Hz~70 kHz (4Ω, 0.03%) 5 Hz~70 kHz (8Ω, 0.02%)
Residual hum and noise	0.5 mV
Damping factor	40 (4Ω), 80 (8Ω)
Headphones output level and impedance	740 mV/330Ω
Load impedance	
MAIN or REMOTE	4Ω~16Ω
MAIN and REMOTE	8Ω~16Ω

### ■ PRE AMPLIFIER SECTION

Input sensitivity and impedance

PHONO MM	2.5 mV/47kΩ
MC	170 μV/220Ω

TUNER, CD, TV/AUX 1, VIDEO/AUX 2,

TAPE 1/DA TAPE, TAPE 2/VCR 150 mV/18kΩ

PHONO maximum input voltage (1 kHz, RMS)

MM	170 mV
MC	12 mV

S/N

rated power (4Ω)

PHONO MM	79 dB (IHF, A: 90 dB)
MC	72 dB (IHF, A: 72 dB (250 μV))

TUNER, CD, TV/AUX 1, VIDEO/AUX 2,

TAPE 1/DA TAPE, TAPE 2/VCR 98 dB (IHF, A: 110 dB)

Frequency response

PHONO

RIAA standard curve

±0.2 dB (30 Hz~15 kHz)

TUNER, CD, TV/AUX 1, VIDEO/AUX 2,

TAPE 1/DA TAPE, TAPE 2/VCR -3 dB (2 Hz~140 kHz)  
+0 dB, -0.1 dB (20 Hz~20 kHz)

Tone controls

BASS

50 Hz, +10 dB~-10 dB

TREBLE

20 kHz, +10 dB~-10 dB

Turnover frequency

BASS

125 Hz, 250 Hz, 500 Hz

TREBLE

2 kHz, 4 kHz, 8 kHz

Muting

-20 dB

Subsonic filter

20 Hz, -6 dB/oct.

Loudness control (volume at -30 dB)

10 Hz, +9 dB

Output voltage and impedance

TAPE 1, 2, REC OUT

150 mV

Channel balance, CD, AUX 1, 2 250 Hz~6,300 Hz

±1 dB

Channel separation, CD, AUX 1, 2 1 kHz

55 dB

# Technics

Matsushita Electric Trading Co., Ltd.

P.O. Box 288, Centra Osaka Japan

VIDEO SECTION  
(TV/AUX 1, VIDEO/AUX 2, TAPE 2/VCR)

Output voltage (at 1V input 75 ohms unbalanced) 1±0.1 Vp-p  
Maximum input voltage 1.5 Vp-p  
Input/output impedance 75 ohms unbalanced

Notes:  
• Total harmonic distortion is measured by the digital spectrum analyzer (H.P. 3045 system).

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GENERAL

Power consumption 670W  
Power supply AC 50 Hz/60 Hz, 110V/127V/220V/240V  
Dimensions (W×H×D) 430 × 147 × 392 mm  
(16-15/16" × 5-25/32" × 15-13/32")  
Weight 13.5 kg  
(29.8 lb.)

• Specifications are subject to change without notice.  
Weight and dimensions shown are approximate.

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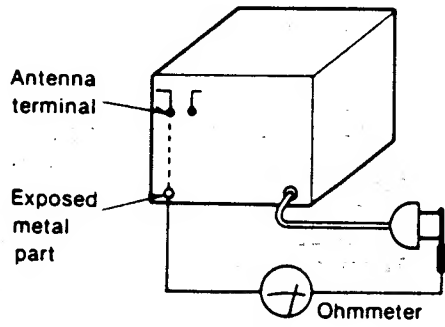
SAFETY PRECAUTION (thes "safety precaution " is applied only in U.S.A.)

- 1. Before servicing, unplug the power cord to prevent an electric shock.
- 2. When replacing parts, use only manufacturer's recommended components for safety.
- 3. Check the condition of the power cord. Replace if wear or damage is evident.
- 4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
- 5. Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.

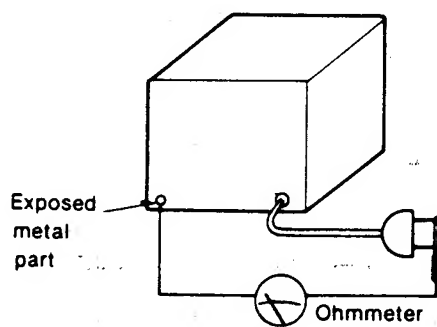
INSULATION RESISTANCE TEST

- 1. Unplug the power cord and short the two prongs of the plug with a jumper wire.
- 2. Turn on the power switch.
- 3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screwheads antenna, control shafts, handle brackets, etc. Equipment with antenna terminals should read between 3MΩ and 5.2MΩ to all exposed parts. (Fig. A) Equipment without antenna terminals should read approximately infinity to all exposed parts. (Fig. B)

Note: Some exposed parts may be isolated from the chassis by design. These will read infinity.



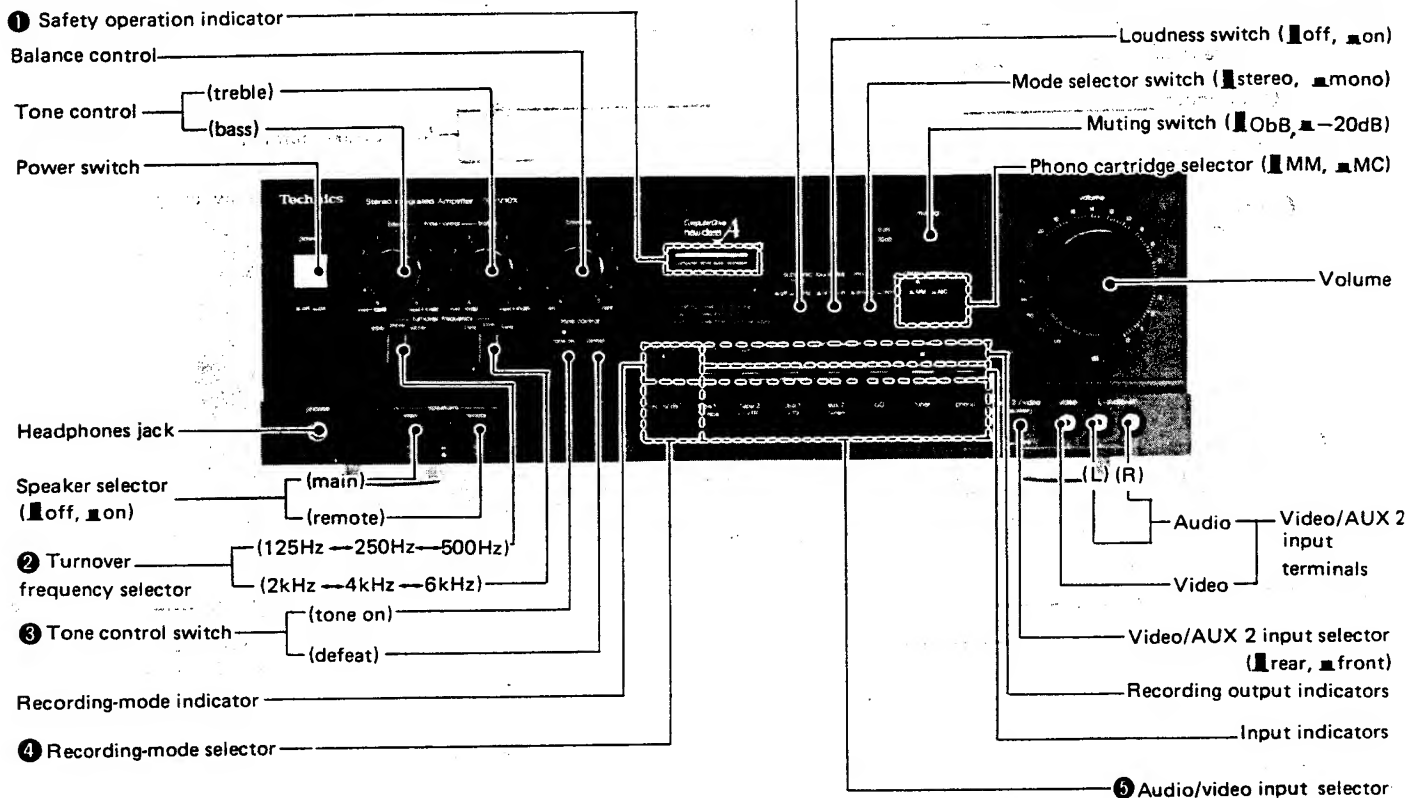
(Fig. A)  
Resistance = 3MΩ—5.2MΩ



(Fig. B)  
Resistance = Approx ∞

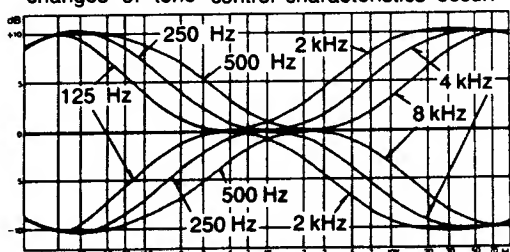
- 4. If the measurement is outside the specified limits, there is a possibility of a shock hazard. The equipment should be repaired and rechecked before it is returned to the customer.

## LOCATION OF CONTROLS



① When the power is switched ON, this indicator flashes for about 5 seconds, and then illuminates steadily when the unit is in the operation condition.  
If an abnormal condition in the circuitry is detected, such as DC voltage appearing in the output, or a short-circuit of the positive (+) and negative (-) wires from the speaker terminals, the protection circuit functions and this indicator flashes rapidly. If this occurs, switch the power OFF, find the cause of the trouble and correct it, and then switch the power ON once again.

② These selectors are used to select the range within which changes of tone control characteristics occur.



③ This switch is used to switch the tone control circuit (bass, treble) ON or OFF.

**defeat:** Set to this position to switch the bass/ treble tone control circuit OFF. Regardless of the positions of the tone controls, the characteristics will remain flat.

**tone on:** Set to this position for adjustment of the tone quality with the tone controls.

④ This button can be used to switch the mode to the source to be heard (or watched) as selected by one of the source selectors, or to the source to be recorded.

When this button is pressed, the recording-mode indicator flashes, and, when one of the source selectors is pressed, the indicator illuminates steadily. If the indicator flashes, the flashing can be stopped by pressing this button once again.

**When the recording-mode indicator is not illuminated:**

If one of the source selectors is pressed, the program source to be heard or watched and the recording source will both be switched at the same time.

Note, however, that only the program source to be heard or watched will be switched, and the tape can be monitored during recording, if the "tape 1/DA tape" or "tape 2/VCR" source selector is pressed.

**When the recording-mode indicator is flashing:**

This is the mode for selection of the source you want to record. If one of the source selectors is pressed, only the recording program source will be switched.

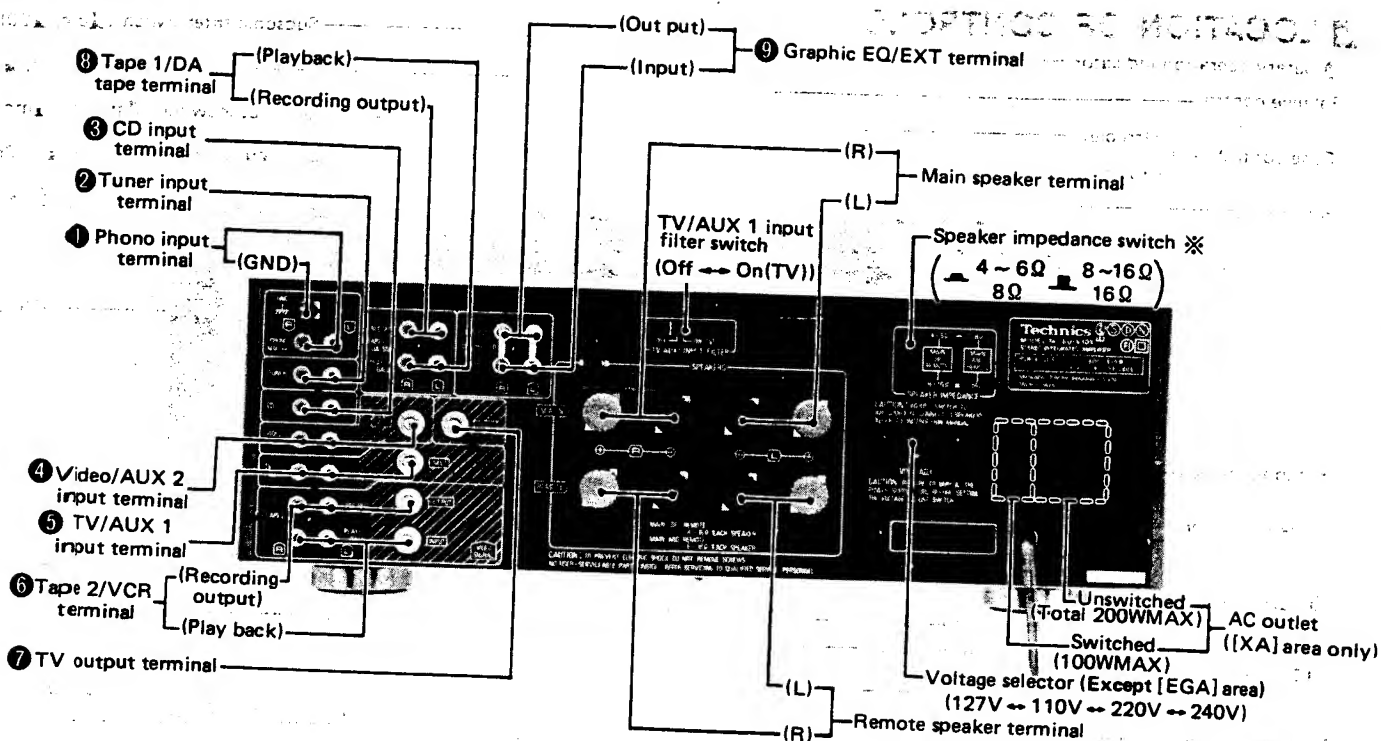
**When the recording-mode indicator is illuminated:**

This is the mode for listening to (or watching) one source while recording another source. If one of the source selectors is pressed, only the program source to be heard or watched will be switched.

⑤ These buttons have two functions:

When the recording-mode indicator is not flashing or not illuminated, these buttons are used to select the program source to be heard or watched. (The signal is available at the speaker terminals and headphones jack.)

When the recording-mode indicator is flashing, these buttons are used to select the program source to be recorded. (The signal is available at the REC OUT terminals.)



★ [EGA] area is provided without voltage selector.  
 ★ Phono input capacitance is about 150pF.

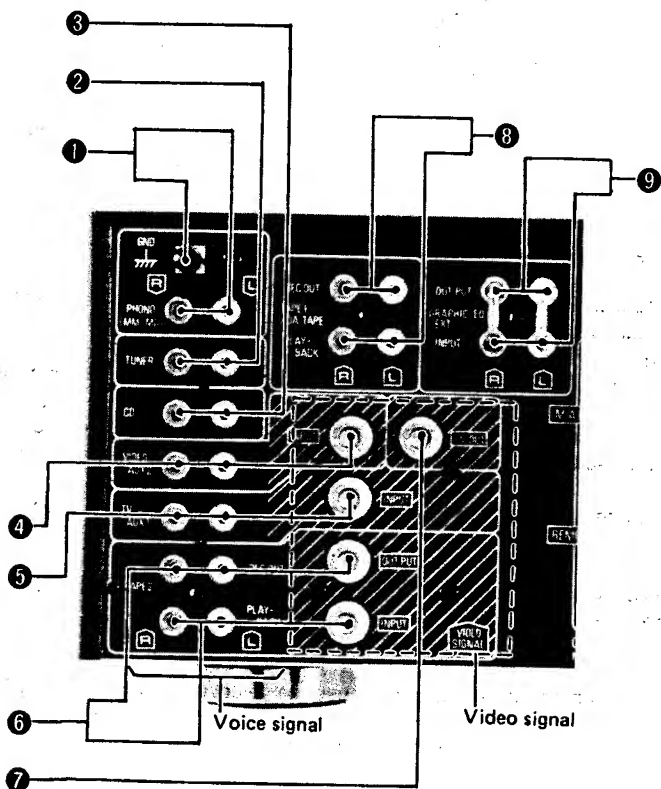
※ If only the main or the remote speaker system is used (4~16Ω):

4~6Ω (■—■):  
 For speaker impedance of 4~6Ω.  
 8~16Ω (■—■):  
 For speaker impedance of 8~16Ω.

■ If both the main and remote speaker systems (8~16Ω each speaker) are used:

- 1) If the impedance of both systems is 16 ohms, set the speaker impedance selector to "16Ω".
- 2) If the impedance of both systems is 8 ohms, or one is 8 ohms and the other is 16 ohms, set the speaker impedance selector to "8Ω".

## VOICE AND VIDEO SIGNAL TERMINAL

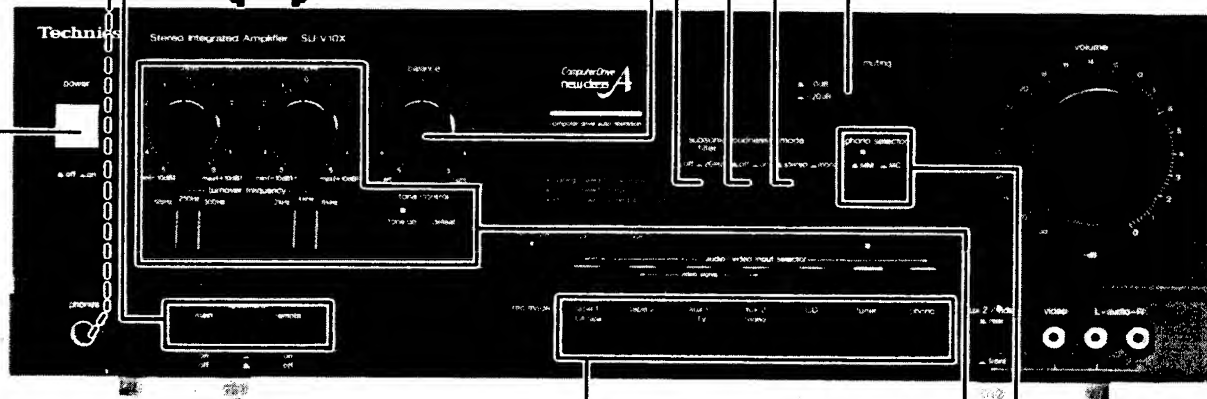




## ■ OPERATION

### Standard operating procedures

- 1 **Power: "on" (I → II)**  
Be sure to reduce the volume level to a low ("∞ → 60") position before switching ON the power.
- 2 **Select the speaker systems to be used.**  
If sound from speakers is not wanted, set the speaker selectors to the "off" position.  
Headphones (option) **Note:** Set volume control to the minimum ("∞") position before connecting headphones.  
Plug type: 1/4-inch phone plug, stereo type



- 3 **Select the program source.**  
(The picture and sound can be switched at the same time.)  
**tape 1/DA tape:**  
Press this button to listen to a tape or a digital-audio processor.  
**tape 2/VCR:**  
Set to this position for playback from a VCR or tape deck.  
**aux 1/TV:**  
Press this button to watch a TV.  
**aux 2/video:**  
Press this button to watch a video disc player, etc., is connected to the "VIDEO/AUX 2" terminals (on the front or rear panel).  
**CD:**  
Press this button to listen to a compact-disc.  
**tuner:**  
Press this button to listen to radio broadcasts.  
**phono:**  
Press this button to listen to phono discs.

- 4 **Operate each component.**  
(Refer to the operating instructions for the other equipment used.)

- 5 **Adjust the volume level and the tone quality.**

### After disc play or radio broadcast, etc. has started

- Adjust left/right volume balance.
- Press inward to the "20 Hz" position to eliminate ultra-low-frequency noise (turntable motor "rumble", etc.).
- Press inward to the "on" position when listening to music at a low volume level (for compensation of the bass range).
- Press inward to the "mono" position to listen to sound monaurally (when adjusting left/right volume balance, etc.).
- Press inward to the "-20 dB" position to temporarily reduce the volume level or for more precise control of the volume level.

- Adjust the tone quality as desired.
- Select either "MM" or "MC" when listening to phono discs.
- "tone on"  
If set to the "defeat" position, tone controls have no effect, and frequency response becomes flat.

- 2 Select the tone range.
- 3 Adjust the tone quality.

#### Suggestions

- If noise is very annoying while listening to an FM or AM broadcast, switch OFF the TV, compact-disc player and turntable.
- Switch OFF the TV power if noise is excessive while listening to an audio tape, compact disc or regular phono disc.
- If a striped pattern appears and makes viewing difficult, switch OFF the digital audio processor.

#### After use

After listening is finished, power switches of all equipment should be switched OFF.

## RECORDING

With this unit, you can record an FM broadcast, etc. while watching TV, or record one sound source while listening to another. In addition, the "aux 2/video" terminals on the front panel can be used for easy audio or video tape editing.

- 1 Power: "on" (I→II)**  
Be sure to reduce the volume level to a low ("∞→60") position switching ON the power.
- 2 Select the speaker systems to be used.**  
•Recording-mode selector
- 3 Press.**  
The recording mode indicator will flash.  
(Refer to note 1.)
- 4 Select the desired program source for recording.**  
(The recording mode indicator and recording output signal indicator will illuminate.)  
•Press this button in order to record from a tape deck connected to the "TAPE 1/DA TAPE" terminals to a tape deck connected to the "TAPE 2/VCR" terminals.  
•Press this button in order to record from a tape deck connected to the "TAPE 2/VCR" terminals to a tape deck connected to the "TAPE 1/DA TAPE" terminals.
- 5 Begin recording.**  
By using the controls on the tape deck, adjust the recording level. Then begin recording.
- 6 Set to the position corresponding to the program source to be heard.**  
(One of the input signal indicators will illuminate.)  
•If the program source being recorded is selected:  
The sound going to the tape deck will be heard.  
•If the tape deck making the recording is selected:  
The sound going through the tape deck will be heard.  
•If some other sound source is selected:  
The sound of the selected source can be heard. (This will not effect the recording which is being made.)  
**To record one program source and listen to another:**  
Follow steps 3 through 6.

### Notes:

1. While a recording is in progress:  
Do not press the recording-mode selector, because the recording will be interrupted and the recording source will be changed.
2. For timer recordings:  
Be sure to check that the recording-mode indicator is illuminated steadily (not flashing).  
Note that the recording might not be made if the recording-mode indicator is flashing.

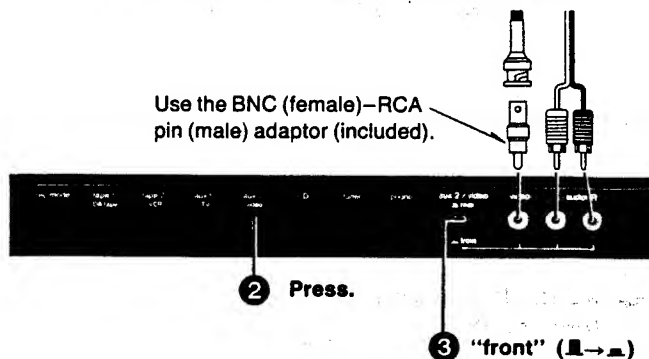
### Tape-to-tape recording of video tapes

A copy of a video tape can be made by connecting a video deck for playback to the "aux 2/video" terminals on the front panel.

#### Note:

Follow these steps in addition to step 4 above.

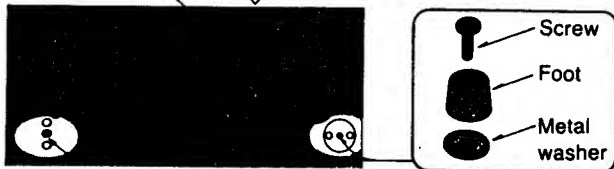
- 1 Connect the VCR to be used for playback to the "aux 2/video" terminals on the front panel.**



### ● Placement on top of other equipment

To accommodate equipment of different depths, use the additional feet (included) to support this unit.

Bottom of this unit    ↓    Rear



### ● If a TV is connected to this unit

#### ● If speakers are placed near the television

Move the speakers away from the TV to a position where the picture is improved if the TV's picture color changes or distortion appears on the TV screen.

(This is not necessary, however, for shielded speakers.)

#### ● If a turntable is placed near the TV

Place it on the right side of the TV.

TV magnetism might otherwise affect the record player's cartridge performance, causing interference noise.

## ■ PROTECTION CIRCUITRY

The protection circuitry may have operated if either of the following conditions is noticed:

- No sound is heard when the power is switched ON.
- Sound stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted", or if speaker systems with an impedance less than the indicated rated impedance of this unit are used.

If this occurs, follow the procedure outlined below:

1. Switch OFF the power.
2. Determine the cause of the problem and correct it.
3. Switch ON the power once again.

#### Note:

When the protection circuitry functions, the unit will not operate unless the power is first switched OFF and then ON again.

## ■ BEFORE REPAIR AND ADJUSTMENT

- (1) Turn off the power supply. Using a 10Ω, 5W resistor, shortcircuit both ends of power supply capacitors(C901~ 904, 10000μF) in order to discharge the voltage.
- (2) Before turning the power supply on, after completion of repair, slowly apply the primary voltage by using a power supply voltage controller to make sure that the consumed current at 50/60 Hz in NO SIGNAL mode should be shown below with respect to supply voltage 110V/127V/220V/240V.

Power supply voltage		AC110V	AC127V	AC220V	AC240V
Consumed current	50/60Hz	270 ~ 730mA	250 ~ 670mA	135 ~ 370mA	125 ~ 340mA

## ■ DISASSEMBLY INSTRUCTIONS

Ref. No. 1	How to remove the cabinet	
Procedure 1	1. Remove the 7 screws (①~⑦)	

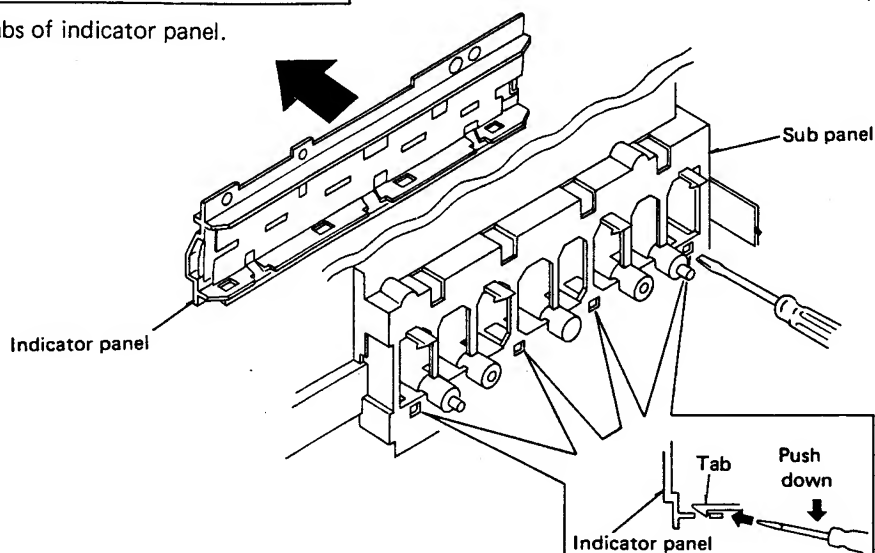
<b>Ref. No.</b> 2	<b>How to remove the front panel</b>	2. Remove the front panel (refer to the arrow).
<b>Procedure</b> 1 → 2	Remove the 5 screws (① ~ ⑤) and 4 nuts (⑥ ~ ⑨).	<div data-bbox="858 286 1189 846"> </div> <div data-bbox="1230 443 1485 857"> <p><b>Note</b> Remove the flat cable</p> <p>Flat cable Connector</p> <p>Pushing the connector and extract the flat cable</p> </div>
<b>Ref. No.</b> 3	<b>How to remove the sub panel</b>	
<b>Procedure</b> 1 → 2 → 3	1. Push down the 10 tabs (up side) and Push up the (under side) of sub panel.	<div data-bbox="406 981 1021 1496"> </div> <div data-bbox="1117 958 1465 1205"> <p>Front panel Push down Sub panel</p> </div> <div data-bbox="949 1332 1353 1496"> <p>Sub panel Push up Front panel</p> </div>
<b>Ref. No.</b> 4	<b>How to remove the AUX2/VIDEO P.C.B and speaker selector P.C.B</b>	2. Pull the tab (up side) and 2 tabs (under side) of Speaker selector P.C.B.
<b>Procedure</b> 2 → 3 → 4	1. Pull the 3 tabs (up side) and 4 tabs (under side) of AUX2/VIDEO Input P.C.B.	<div data-bbox="367 1675 762 2134"> </div> <div data-bbox="837 1668 1348 2116"> </div>

Ref. No.  
5

### How to remove the indicator panel

Procedure  
1→2→3→4→5

1. Pull the 4 tabs of indicator panel.

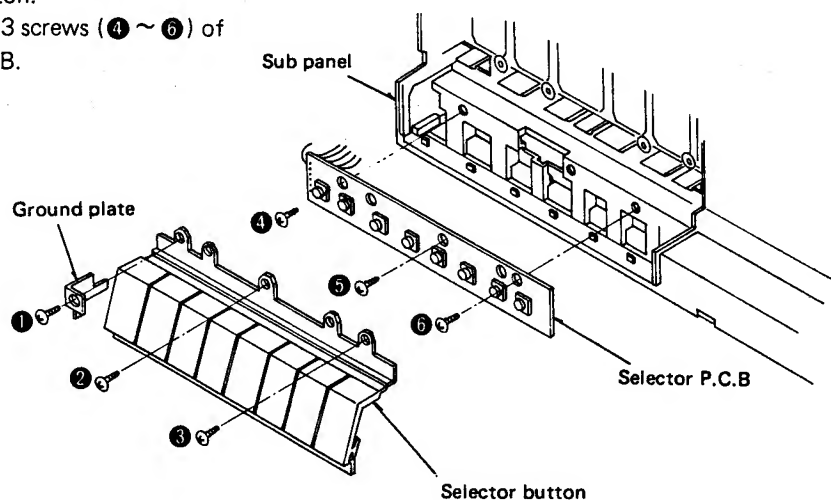


Ref. No.  
6

### How to remove the selector button and selector P.C.B

Procedure  
1→2→3→4→5→6

1. Remove the 3 screws (① ~ ③) of selector button.
2. Remove the 3 screws (④ ~ ⑥) of selector P.C.B.

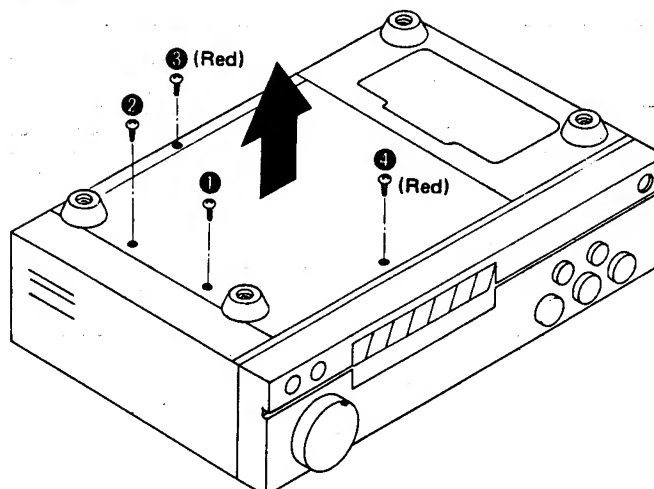


Ref. No.  
7

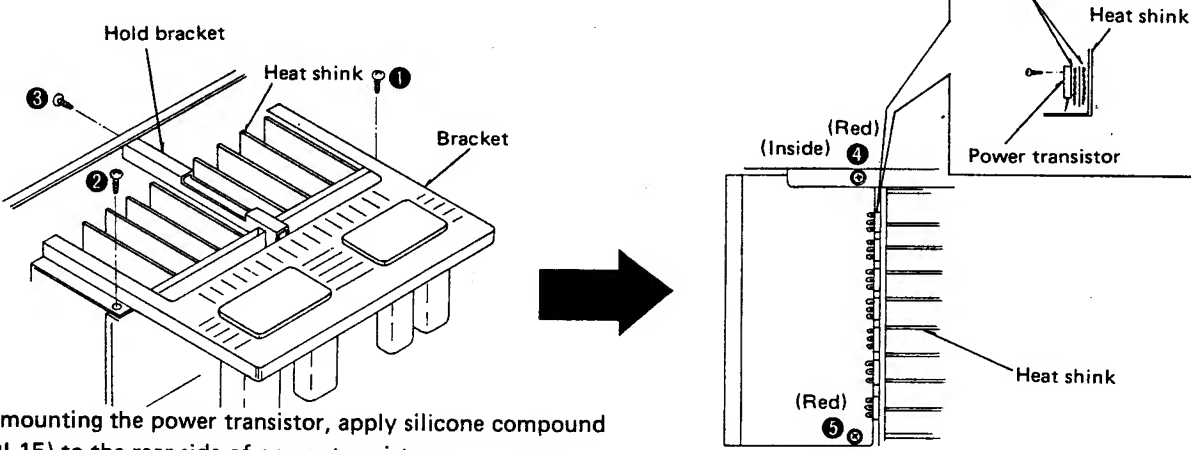
### How to remove the bottom board

Procedure  
7

1. Remove the 4 screws (① ~ ④).



<b>Ref. No.</b> 8	<b>How to remove the power transistor</b>	
<b>Procedure</b> 1 → 7 → 8	<ol style="list-style-type: none"> <li>1. Remove the 2 screws (①, ②) of bracket and screw (③) of hold bracket.</li> <li>2. Unsolder the power transistor.</li> <li>3. Remove the 2 screws (④, ⑤) of heat sink.</li> </ol>	



● When mounting the power transistor, apply silicone compound (SZZ0L15) to the rear side of power transistor.

## ■ FUNCTION OF TERMINAL (Ic<sub>Q</sub> Controller IC801 : MN1421STA)

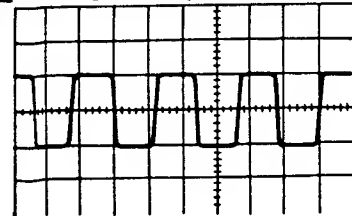
Pin No.	Mark	Name of block	Description of terminal
1	Vss	Power supply input terminal	Ground
2	CO <sub>9</sub>	Output	It delivers I <sub>cQ</sub> control signal through input port A (⑨) (thermal sensor) and input port B (⑪, ⑫) (signal sensor). [Output "H"]
3	CO <sub>8</sub>		
4	CO <sub>7</sub>		
5	CO <sub>6</sub>		
6	CO <sub>5</sub>		
7	AI <sub>3</sub>		
8	AI <sub>2</sub>		
9	AI <sub>1</sub>	Input	When 60°C (140°F) sensor of power amplifier operates, the input level becomes "L".
10	AI <sub>0</sub>	—	Ground
11	BI <sub>3</sub>	Input	Input level changes to "L" as effective output 2V signal sensor of power amplifier operates.
12	BI <sub>2</sub>		Input level changes to "L" as effective output 5V signal sensor of power amplifier operates.
13	BI <sub>1</sub>	—	—
14	BI <sub>0</sub>		
15	EO <sub>0</sub>	—	—
16	EO <sub>1</sub>		
17	EO <sub>2</sub>		
18	EO <sub>3</sub>	Output	Indicator "Computer drive auto operation" light up at "H" output.
19	TST	Test input terminal	Terminal for testing LSI (Grounded)
20	RST	Reset input terminal	All outputs are cleared or reset with input at "L" (It is connected to power supply circuit)
21	SNS <sub>0</sub>	—	Not used in this unit
22	SNS <sub>1</sub>	Input	Input level changes to "H" as power amplifier output short-circuit operates.

Pin No.	Mark	Name of block	Description of terminal
23	PRE HEAT	—	No used
24	DO1	—	Ground
25	DO2	—	Ground
26	DO3	Output	Output relay turns ON with output at "H"
27	VDD	Power supply input terminal	Apply 5V.
28	OSC	OSC input terminal	Clock signal (about 300 kHz) can be obtained by internal oscillation circuit.

## ■ FUNCTION OF TERMINAL (Analog Function Control IC251 : $\mu$ PD7506C043)

Pin. No.	Symbol	Input/Output	Active	Description of terminal
1	P43	—	—	Not used in this unit.
2	x 2	—	—	Not used in this unit.
3	P03/x 1	Input	—	It detects the level of pin ⑤.  Push (once) the "rec selector" switch. Selection of input selector 4.3V 0V
4	P20/PSTB	Output	H	Clock output port for analog switch. Clock signal output to IC201 pin ⑮ and IC202 pin ⑮ during data transmission. [Refer to A]
5	P21/PTOUT	Output	H	Indicator "rec selector" light up at "H".  Push (once) the "rec selector" switch. Selection of input selector 4.3V 0V
6	P22	Output	H	Data output for analog switch. Data signal output to IC201 pin ⑮ and IC202 pin ⑮. [Refer to A]
7	P23	Output	H	Strobe output port for analog switch. Strobe signal output to IC201 pin ⑬ and IC202 pin ⑬ during data transmission. [Refer to A]
8	P60	Output	H	Rec side indicator 3-bit output. Rec indicator drive signal output to IC253 pins ⑬ ~ ⑮. [Refer to E]
9	P61			
10	P62			
11	P63	Input	H	Stop mode sensing input. With high pulse signal input, the stop command is executed and the mode is shifted to standby.  4.4V 0V Power switch "OFF"
12	CL1	—	—	External clock oscillation frequency (400KHz) input port. [Refer to C]
13	CL2	—	—	Not used in this unit.
14	VDD	—	—	Power supply input terminal. (Apply 4.4V)  4.3V 0V Power switch "ON" 1V 0V Power switch "OFF"
15	RESET	Input	H	Input terminal for reset signal.  4.3V 0V
16	P10	Input	H	Input terminal for key return signal from external key matrix. [Refer to D]
17	P11			
18	P12			
19	P13			
20	P50			
21	P51			
22	P52			
23	P53	Output	H	Output terminal for key scan signal for external key matrix. (Output voltage is 4.3V)  4.3V 0V Push the each input selector or muting switch.
24	P00	Input	—	Mode shifting port. $\begin{cases} \text{H} = \text{Function 1 mode} \\ \text{L} = \text{Function 2 mode} \end{cases}$ The input of this unit is "H" (4.9V) because the mode used is Function 1.
25	P40	Output	H	Input side indicator 3-bit output. Input indicator drive signal to IC254 pins ⑬ ~ ⑮. [Refer to E]
26	P41			
27	P42			
28	VSS	—	—	Ground terminal.

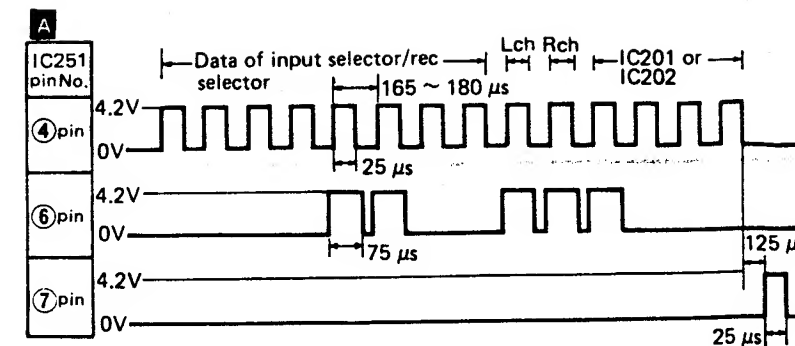
■ IC251 ⑫ 2V DIV/1  $\mu$ SEC



- ① Push the rec selector switch. ("rec indicator" blinking)
- ② Push the each input selector switch.

Pin No. of IC251		L = 0V, H = 4.3V		
Input selector	⑧	⑨	⑩	
phono	L	H	L	
tuner	H	L	L	
CD	L	H	L	
video/aux	H	H	L	
tape 2	H	L	H	
tape 1/DA tape	L	L	H	

Pin No. of IC251		L = 0V, H = 4.3V			
Input selector	⑬	⑭	⑮	⑯	
phono	L	L	L	H	
tuner	L	L	H	L	
CD	L	H	L	L	
video/aux	H	L	L	L	
tape 2	L	L	H	L	
tape 1/DA tape	L	L	L	H	
rec selector	H	L	L	L	



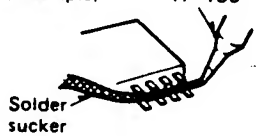

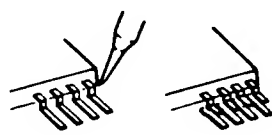
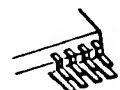
Pin No. of IC251		⑮	⑯	⑰
Input selector				
phono	L	L	L	L
tuner	H	L	L	L
CD	L	H	L	L
video/aux	H	H	L	L
tape 2	H	L	H	L
tape 1/DA tape	L	L	H	L
rec selector	L	L	L	L
muting	L	L	L	L

## ■ TERMINAL GUIDE OF TRANSISTORS, DIODES AND IC'S

TC9163N 28 Pin TC9164N 28 Pin MN1421STA 28 Pin $\mu$ PD7506C043 28 Pin AN7062 18 Pin DN74LS145 16 Pin MN4069UB 14 Pin $\mu$ PD4066BC 14 Pin	M5219P M5218P	AN78M05	2SK369
2SA1123, 2SD592ANC, 2SC1845 2SA992, 2SC2631, 2SB621, 2SC3112 2SC1685, 2SA1370, 2SA722	2SC3467	2SK301 2SK170	2SC3298A 2SA1306A
LN41YCPHL	LN81CPHL	20A90	MA4180M
MC911	MA162A	MA167	SVDS10VB20F 1SR35200
MA4200 MA4150 MA4068	MA4180M	MA4180M	MA4180M



## ■ HOW TO REPLACE IC'S (Small outline type)

Replacing procedure			Cautions
1	Reduce the amount of solder on each pin of the integrated circuit by use of a solder sucker.	(Example) H-130 	<ul style="list-style-type: none"> <li>● <b>Recommended tool</b> .....Special soldering iron *H605M and H-130. *H605E and H-130.</li> <li>● Do not touch the soldering iron to the area for a long time. It may otherwise cause removal of the print foil.</li> <li>● When shifting the pin upward, do the job quickly while the solder is melting. If the solder is hard, it may cause removal or breakage of the print foil.</li> <li>● When using a pencil type soldering iron.               <ol style="list-style-type: none"> <li>1. Completely remove the solder from each IC pin by use of solder sucker.</li> <li>2. Raise each pin by means of an eyeleteer, hold the pliers then remove IC package from P.C.B.</li> </ol> </li> </ul>
2	Melt the solder on the pin (one electrode) with the soldering iron.		
3	While the solder is melting, shift the pin upward by the soldering iron to remove it from the foil.		
4	Remove each pin from the foil according to the above-mentioned procedure.		

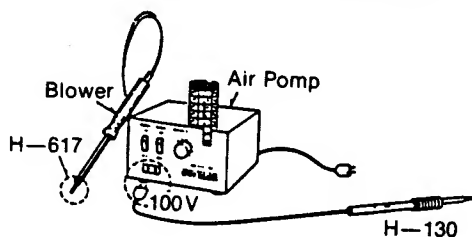
### \* Special soldering iron

(Refer to Technical Information, ORDER NO. GAD84125486T1)... For U.S.A. and Canada  
(Refer to Technical Information, ORDER NO. GAD84115476T8)... For others

#### ● H-605 Spot Heater (hot-air solder iron)

This device that uses hot air to melt solder was developed to remove Flat-Package ICs, RHCs and chip parts.

- H-605M (For 120V power source)
- H-605E (For 200V/220V/240V power source)



#### ● H-617 Twin Nozzle (for spot heater)

Special nozzle for the removal of RHCs and chip resistors.  
(Nozzle diameter : 1.0 mm x 2)

#### ● H-130 Slim Pencil Solder Iron

An ultrasmall ceramic heater solder iron is extremely handy for soldering chip parts, RHCs, ICs, etc., to high-density circuit boards.

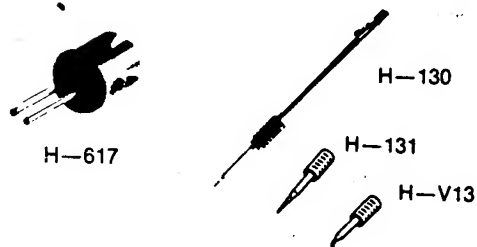
Features:

- Rated power: 100V, 15W
- Max. temp.: 400°C
- Heater: ceramic (long life)
- Insulation resistance: 100MΩ
- Length: 178 mm
- Weight: 16 g (not including cord)

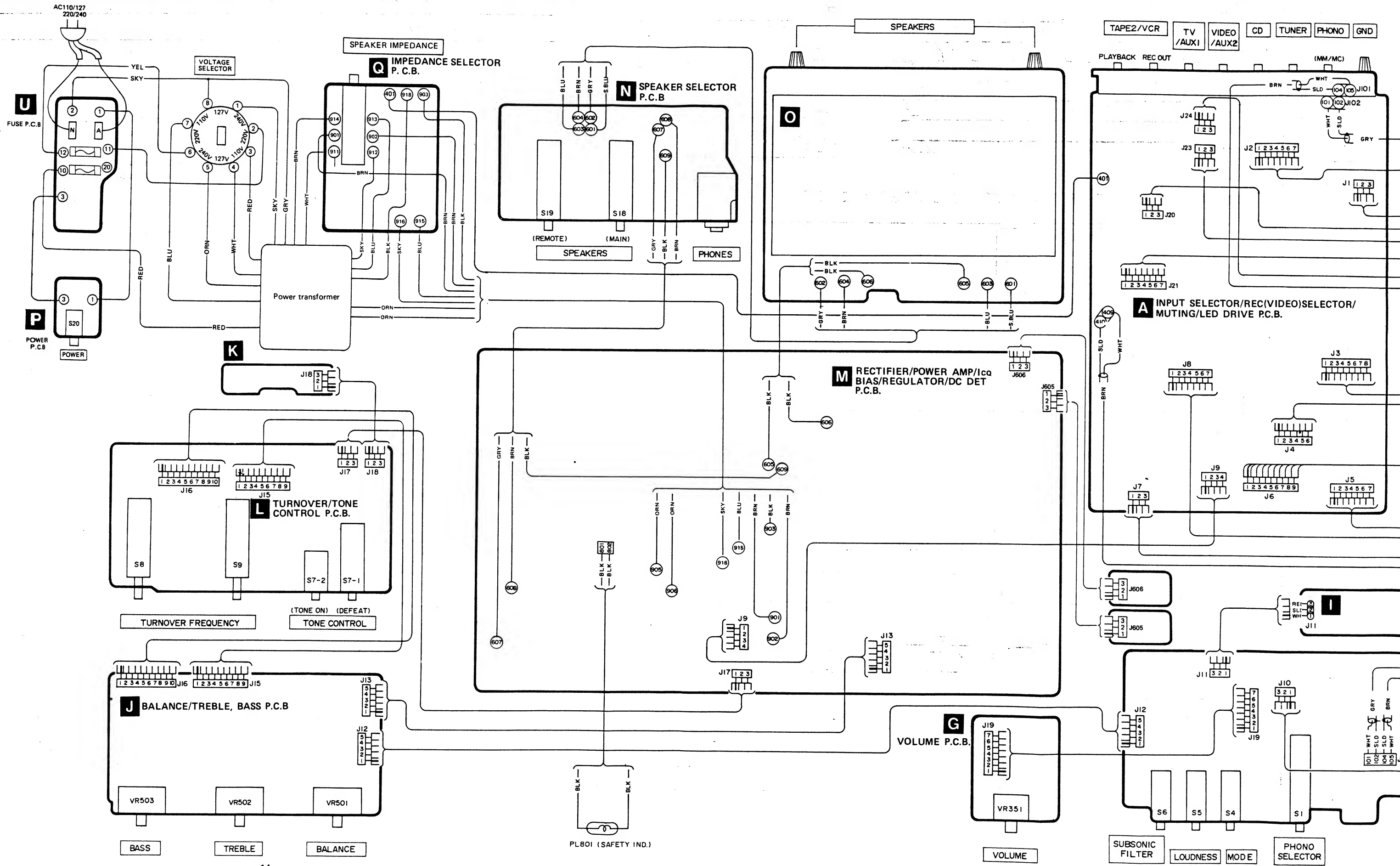
#### ● H-131, H-V13 Cap Bits

Solder tip for the slim pencil Solder Iron and is composed of a bit holder and a corrosion resistance solder tip. Permits changing of solder tips even while still hot.

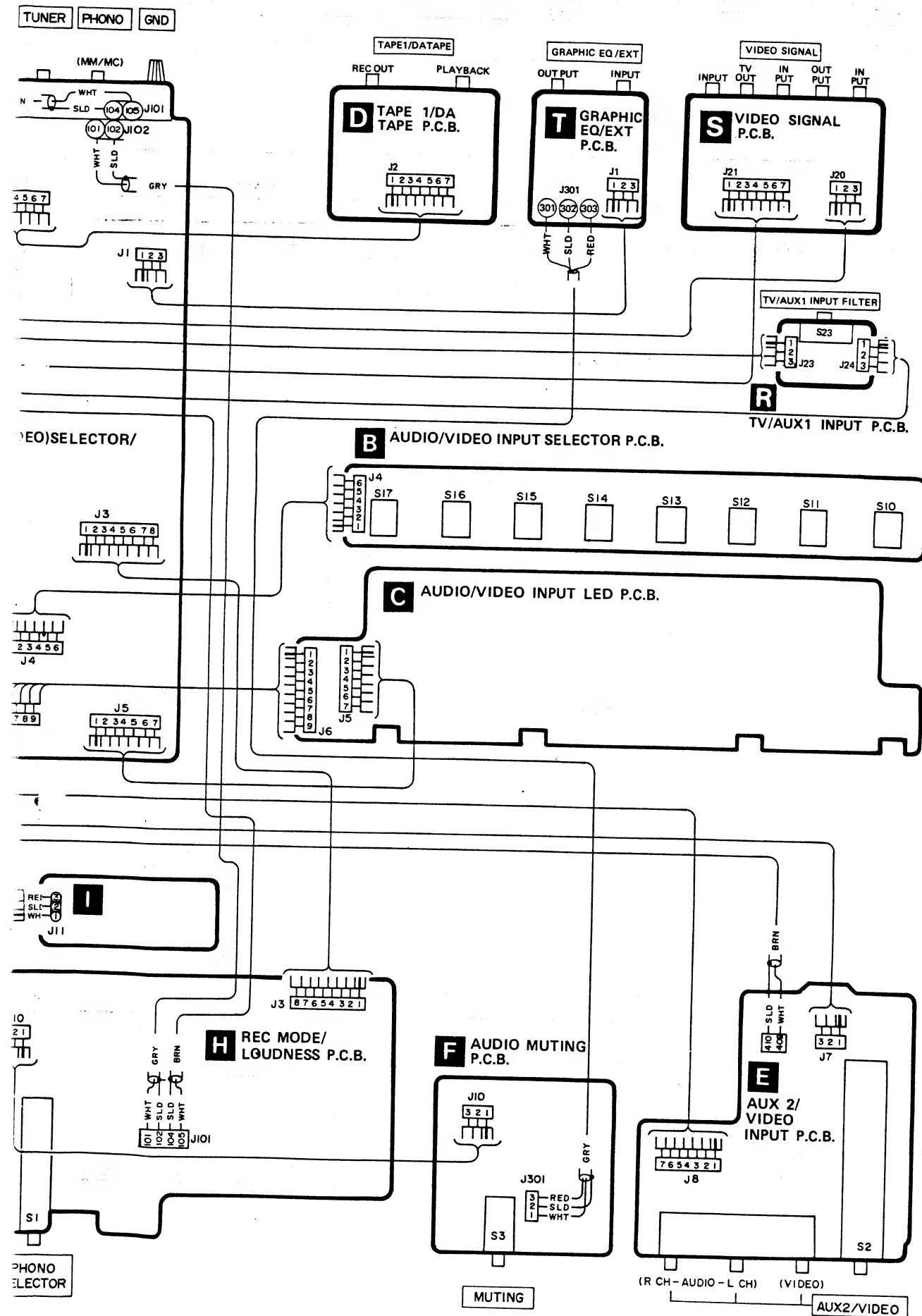
- Solder tip: 0.3 mm



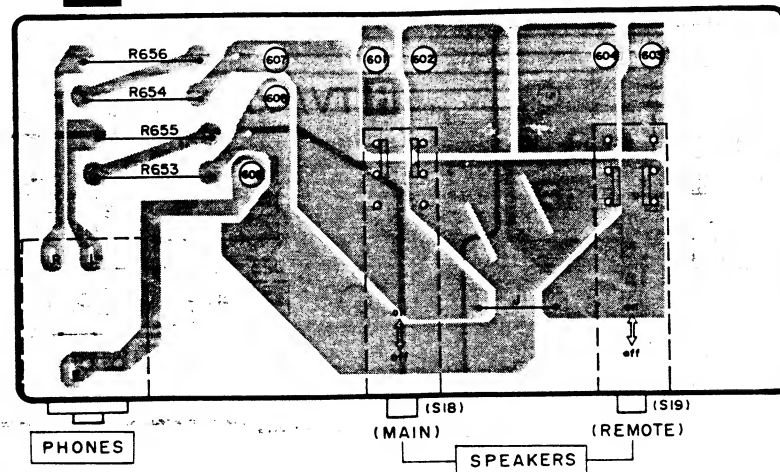
WIRING CONNECTION DIAGRAM



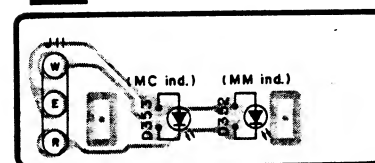
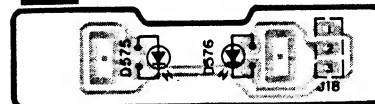
# SU-V10X



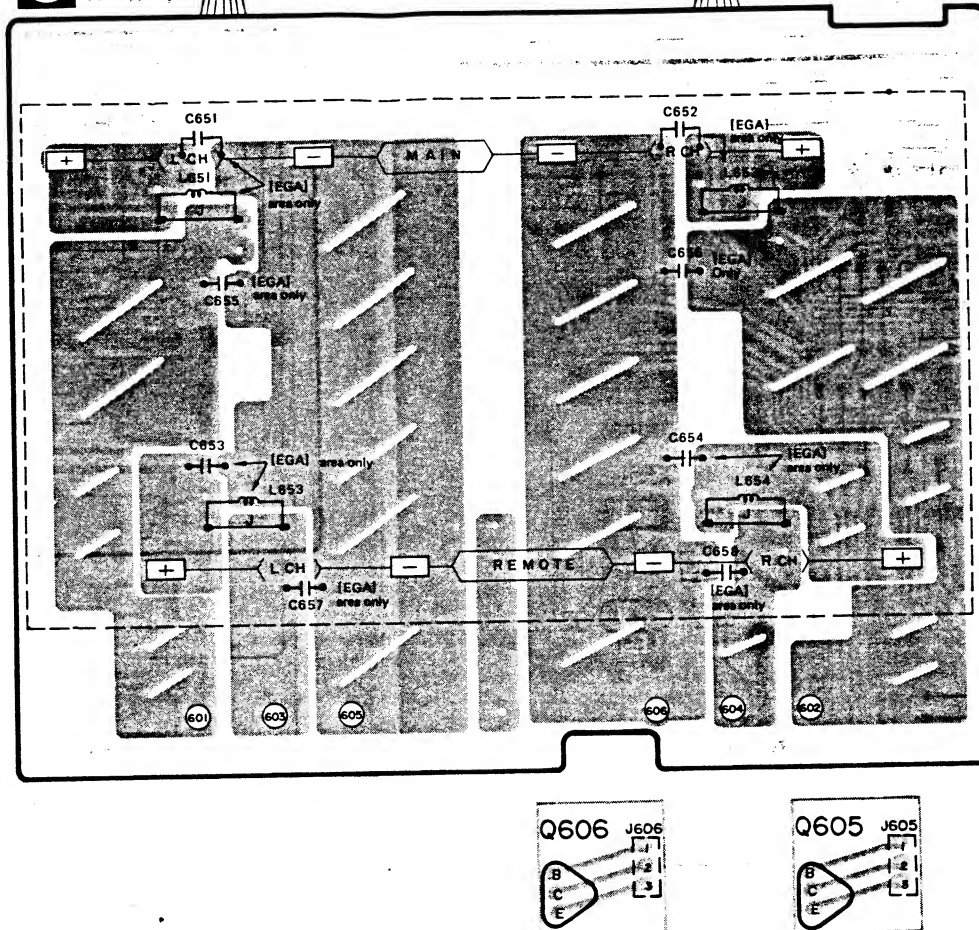
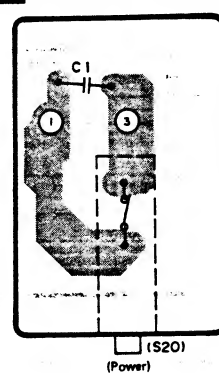
## ■ PRINTED CIRCUIT BOARDS

**N** SPEAKER SELECTOR P.C.B.

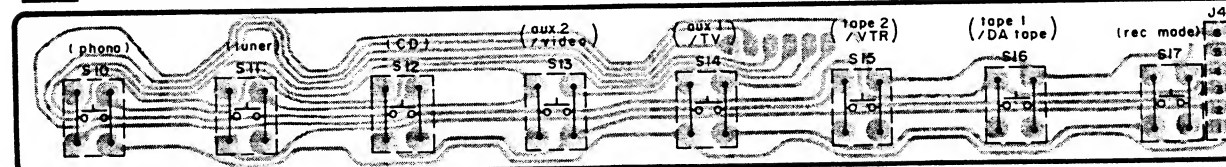
**K** (defect ind.) (tone on ind.)



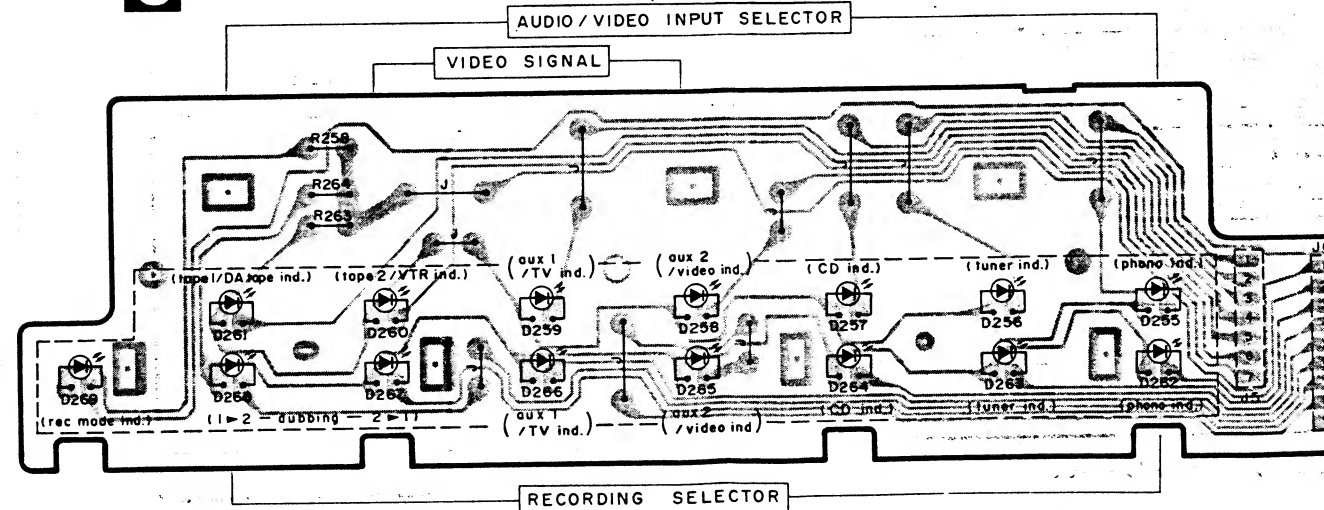
**P** POWER P.C.B.



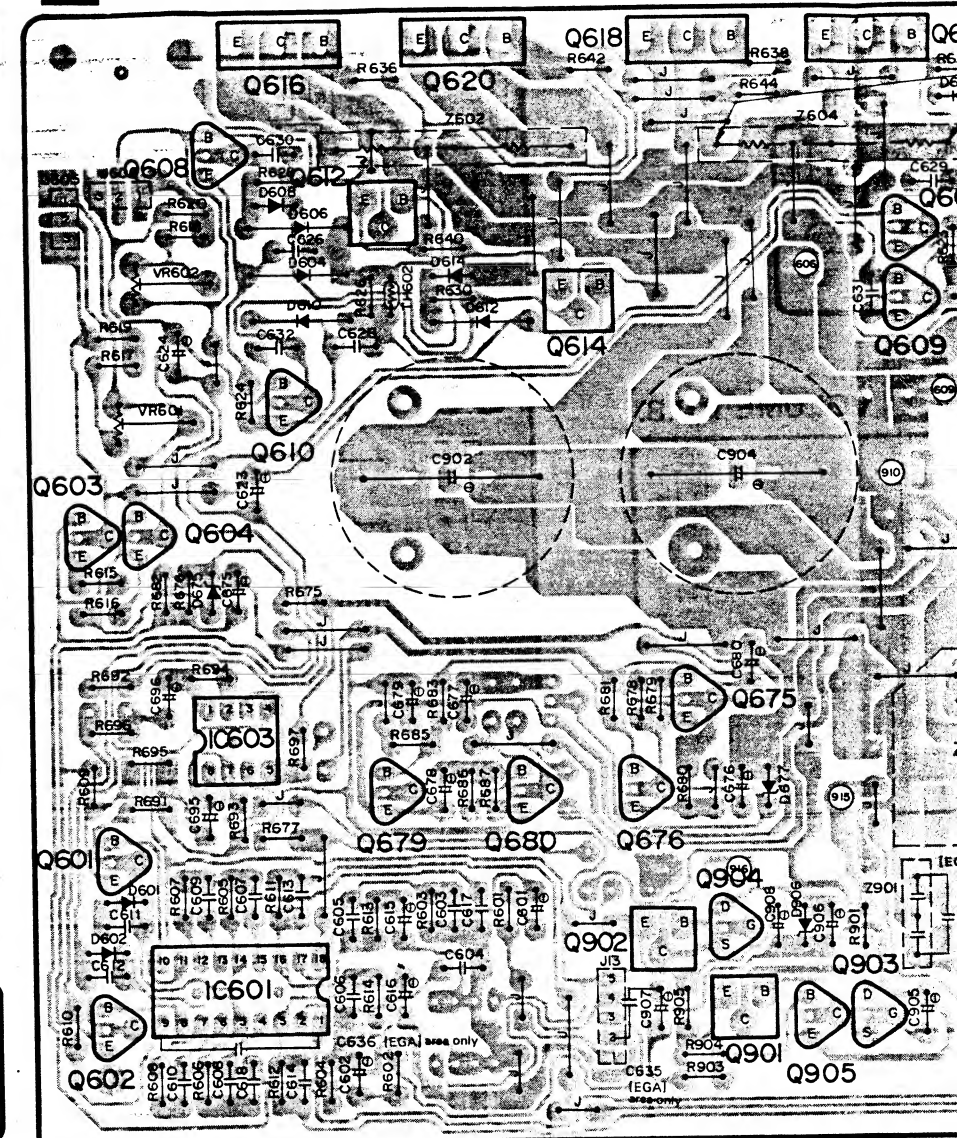
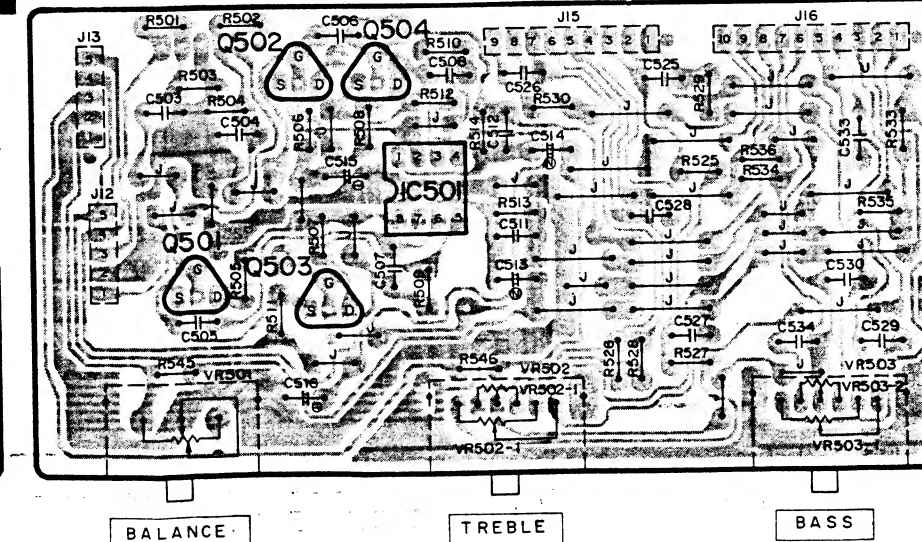
## B AUDIO/VIDEO INPUT SELECTOR P.C.B.



## C AUDIO/VIDEO INPUT LED P.C.B.

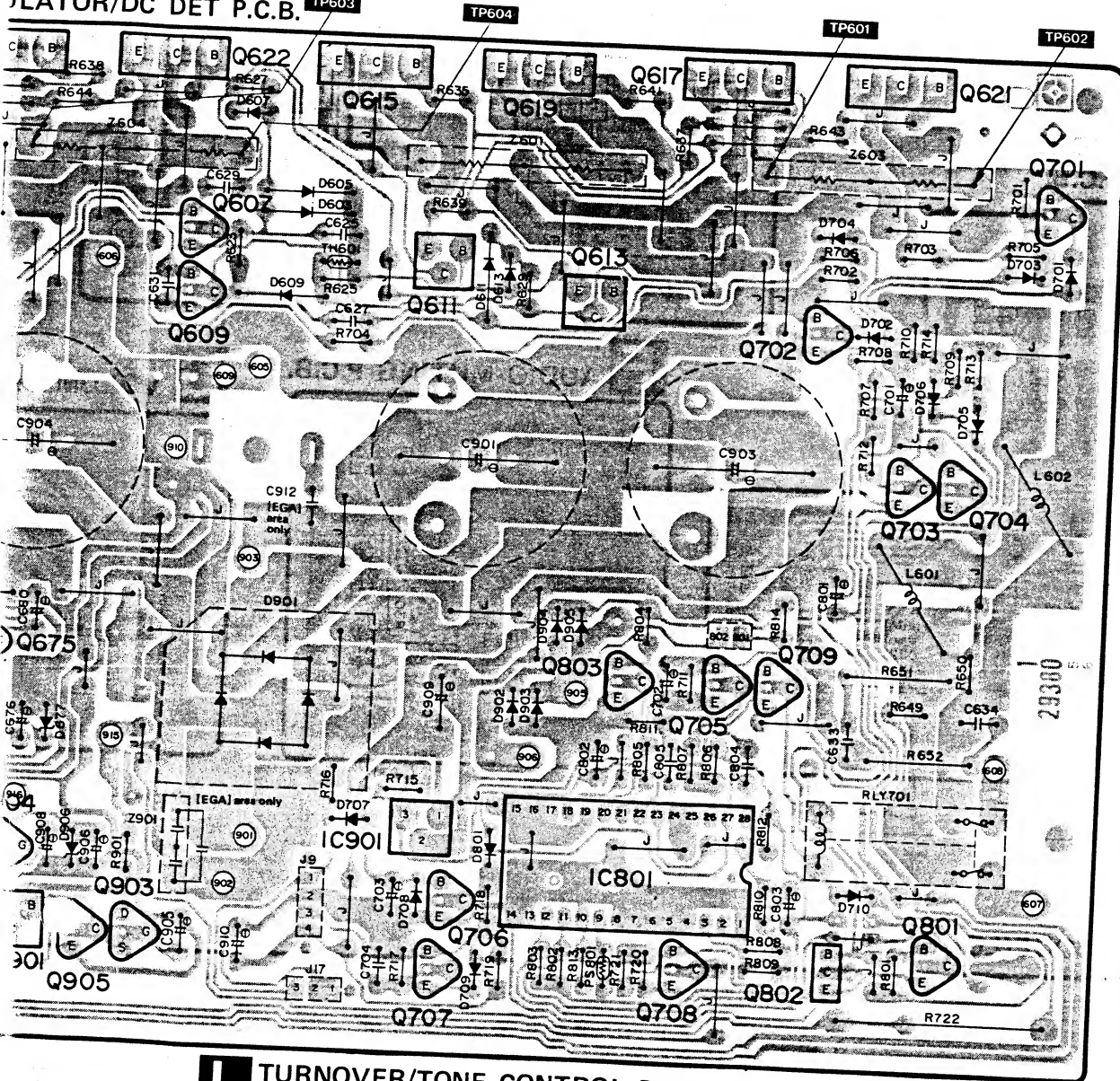


**M** RECTIFIER/POWER AMP/IC<sub>Q</sub> BIAS/REGULATOR/DC DET. P.

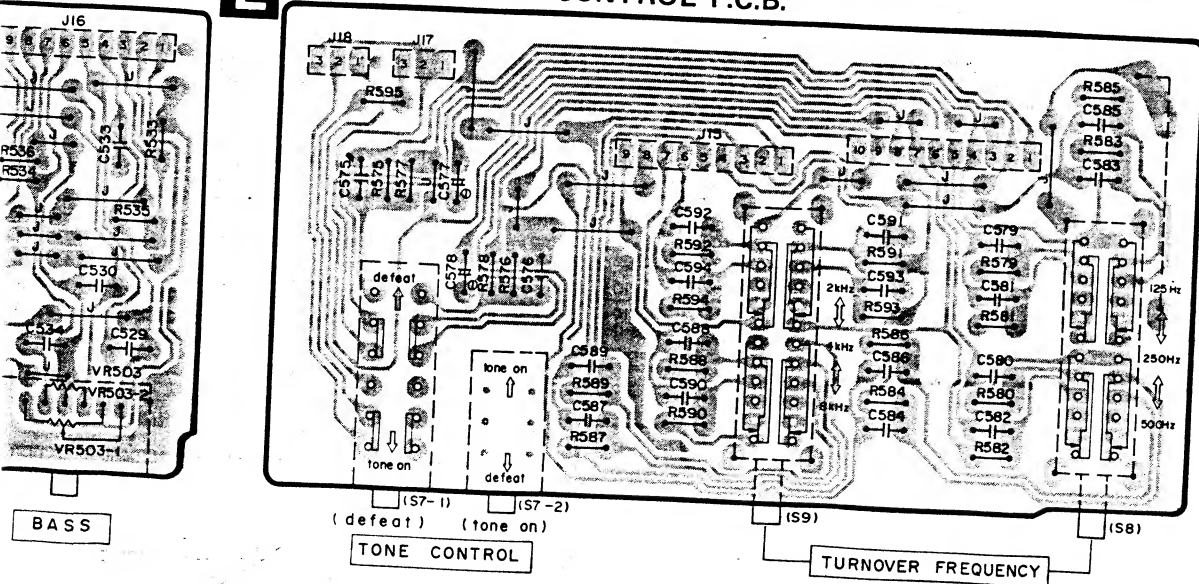
**J** BALANCE/TREBLE, BASS P.C.B



AMPLIFIER/DC DET P.C.B.

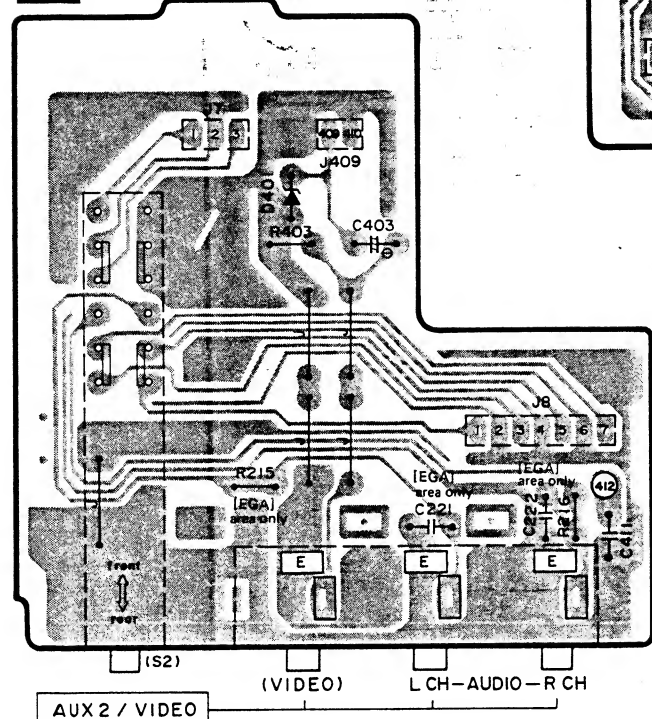


TURNOVER/TONE CONTROL P.C.B.

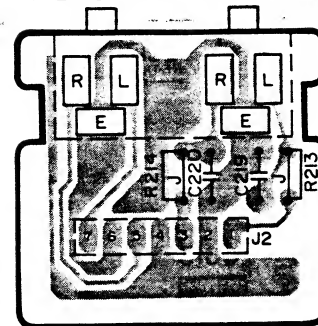




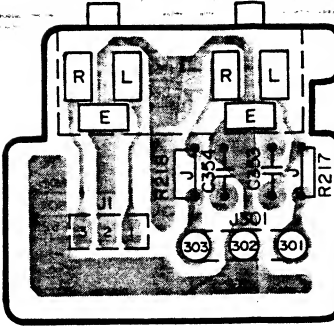
**E** AUX 2/VIDEO INPUT P.C.B.



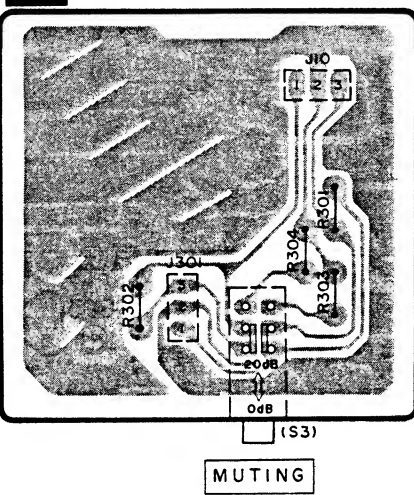
TAPE1/DA TAPE  
(PLAYBACK) (REC OUT)



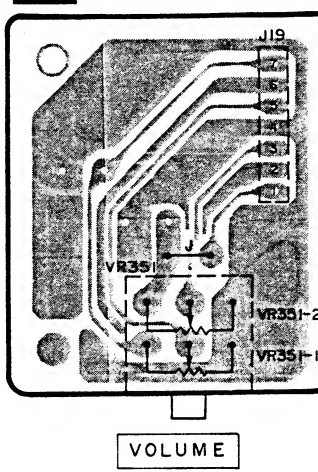
GRAPHIC EQ/EXT  
(OUT) (1N)



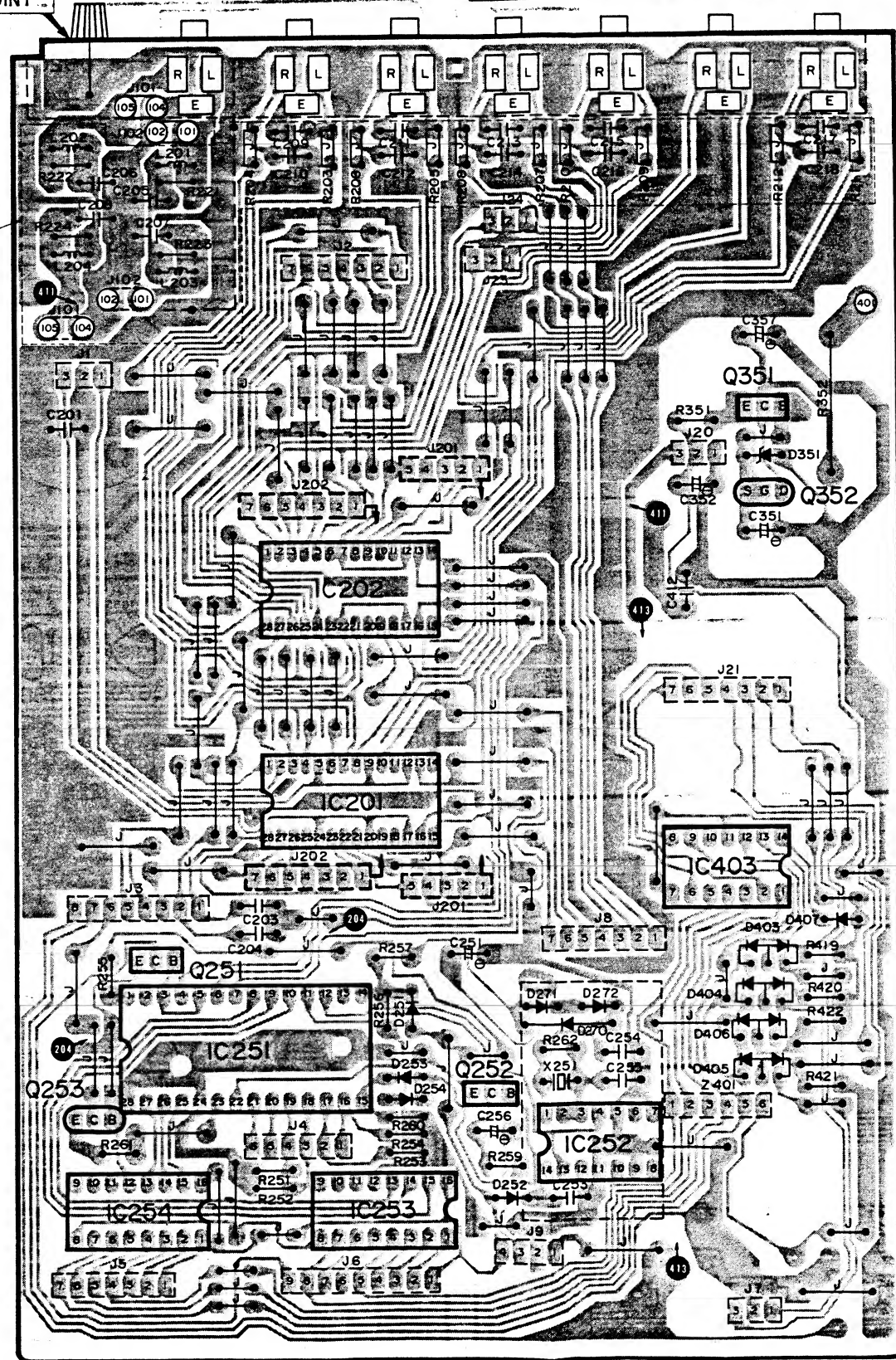
**F** AUDIO MUTING P.C.B.



**G** VOLUME P.C.B.

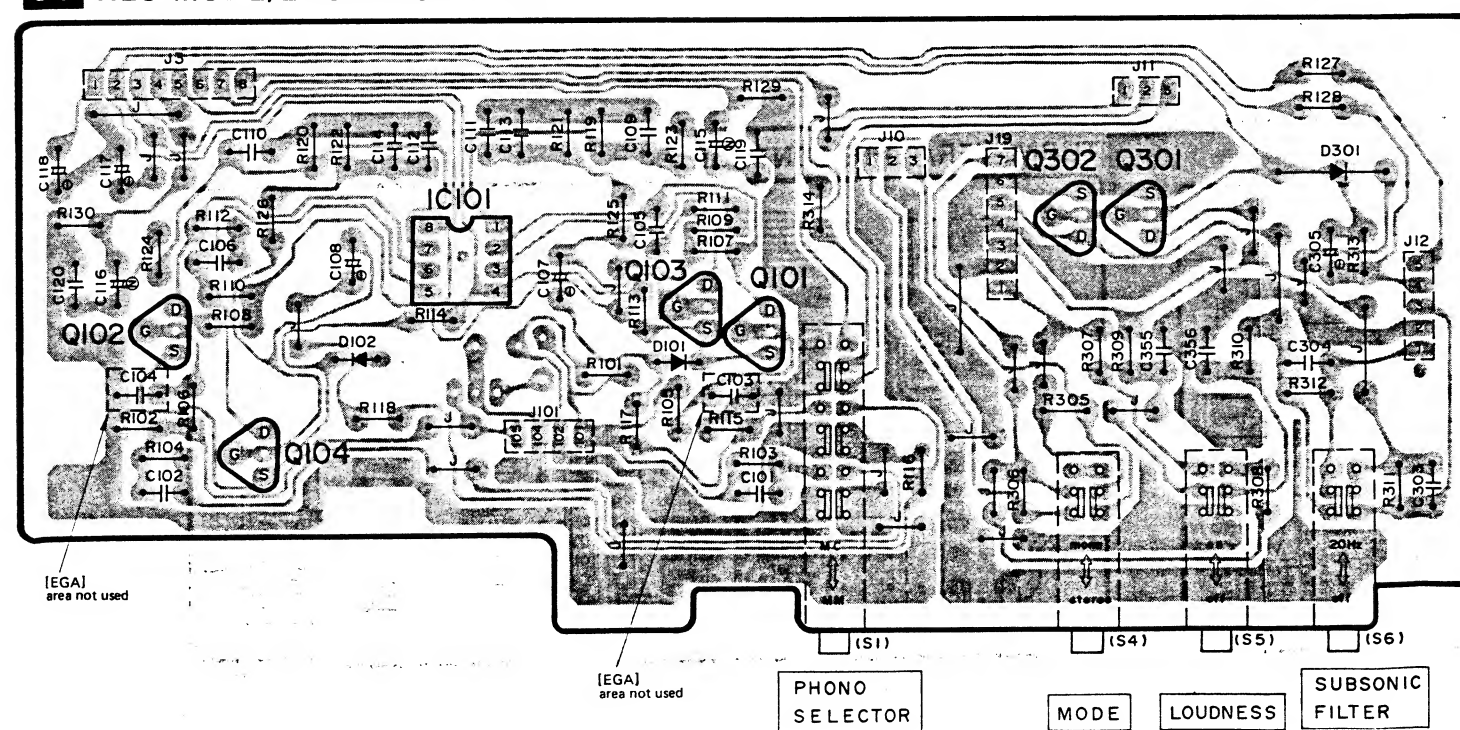


GND PHONO TUNER CD VIDEO TV TAPE2/VTR  
(MM/MC) (REC OUT) (PLAYBACK)

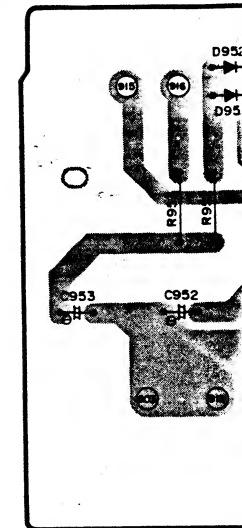


**A** INPUT SELECTOR/REC(VIDEO)SELECTOR/MUTING /LED DRIVE P.C.B.

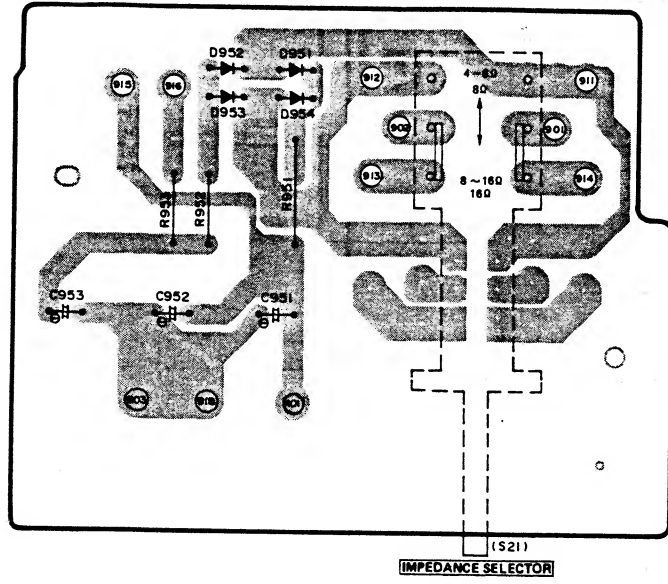
**H** REC MODE/LOUDNESS P.C.B.



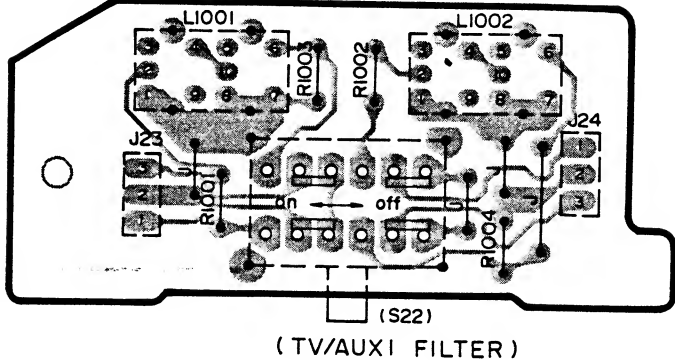
**Q** MPEDANC



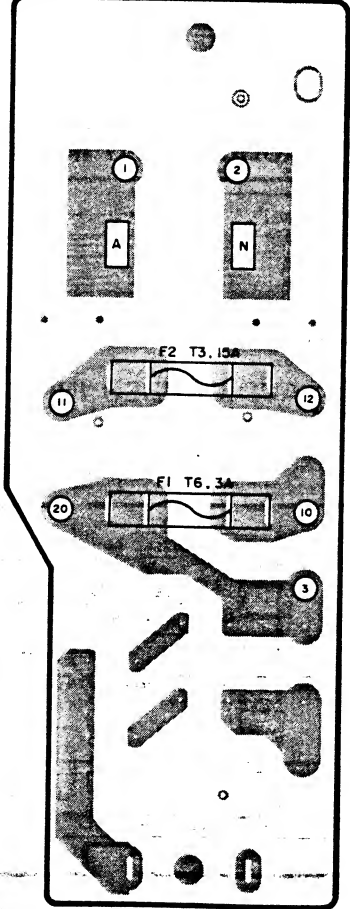
**Q** MPEDANCE SELECTOR P.C.B.



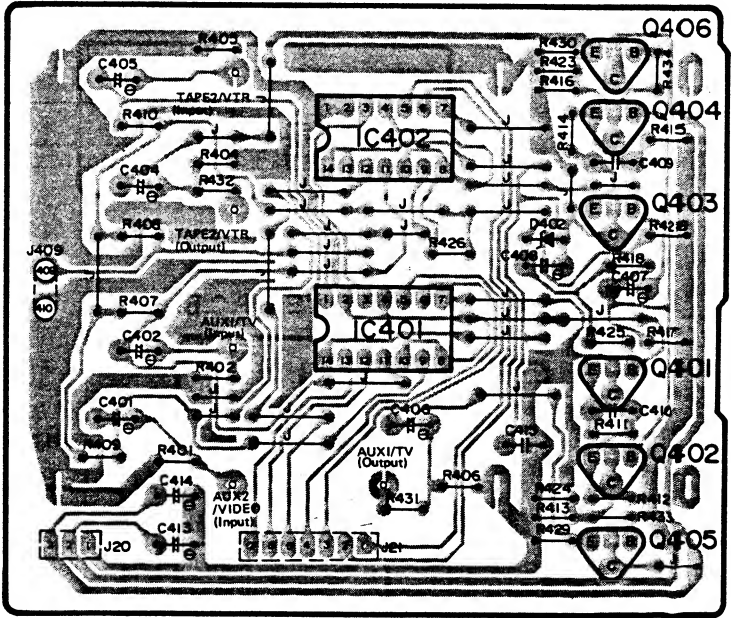
**R** TV/AUX1 INPUT FILTER P.C.B.



**U** FUSE P.C.B.



**S** VIDEO SIGNAL P.C.B.





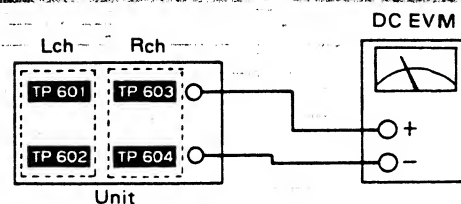
## MEASUREMENT AND ADJUSTMENTS

### Control positions and equipment used

- Volume knob . . . . .  $\infty$
- Main speaker selector . . . . . off
- Remote speaker selector . . . . . off
- Recording selector . . . . . aux 1/TV
- Speaker impedance swith. . . . .  $16\Omega$
- AC and DC electronic voltmeter (EVM)
- Signal generator
- Resistor ( $0.33\Omega$ )

### Idling (ICQ) Adjustment

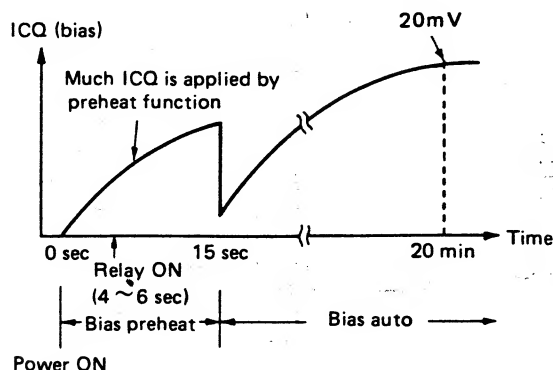
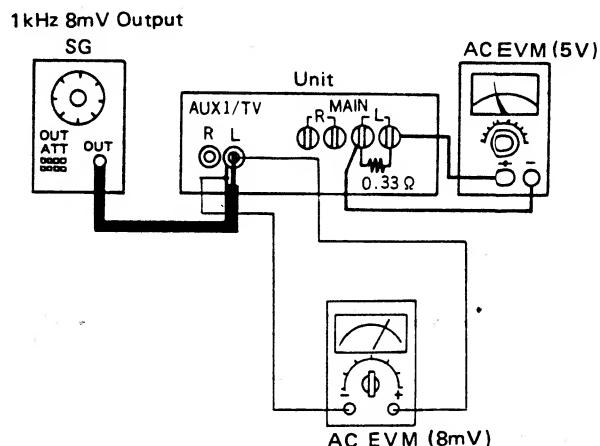
1. Test equipment connection is shown in figure.
2. Turn the ICQ control volume (VR601, VR602) counter-clockwise.
3. After turning the power switch "on", adjust VR601 (left channel) and VR602 (right channel) about **20mV** respectively as in Fig. 1.



### Overload detection circuit check

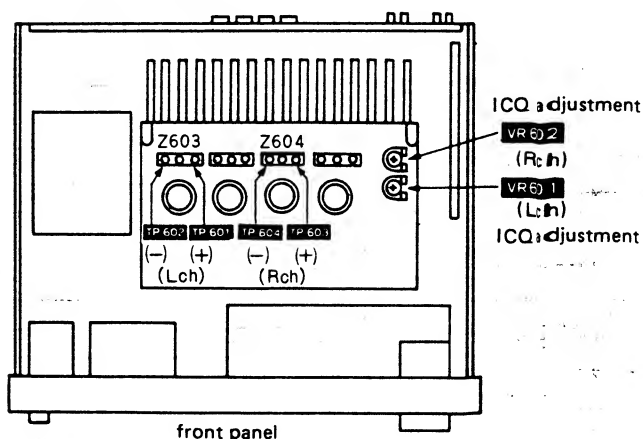
1. Test equipment connection is shown in figure
2. Apply 1 kHz, 8 mV (output about 5 V) signal to the aux. input terminal (aux 1/TV).
3. The speaker switch turned "off".
4. Connect  $0.33\Omega$  (about 1 W) resistor to main speaker terminal.
5. With main speaker switch turned "on", make sure that
  - relay is "OFF" and
  - computer drive auto operation blinks.
6. Also check the right (R) channel in the same manner as mentioned above.

**(Note)** When turning the relay on again, wait for a while after turning the power supply OFF. Otherwise, it will not be reset even when the circuit and load are in normal conditions.

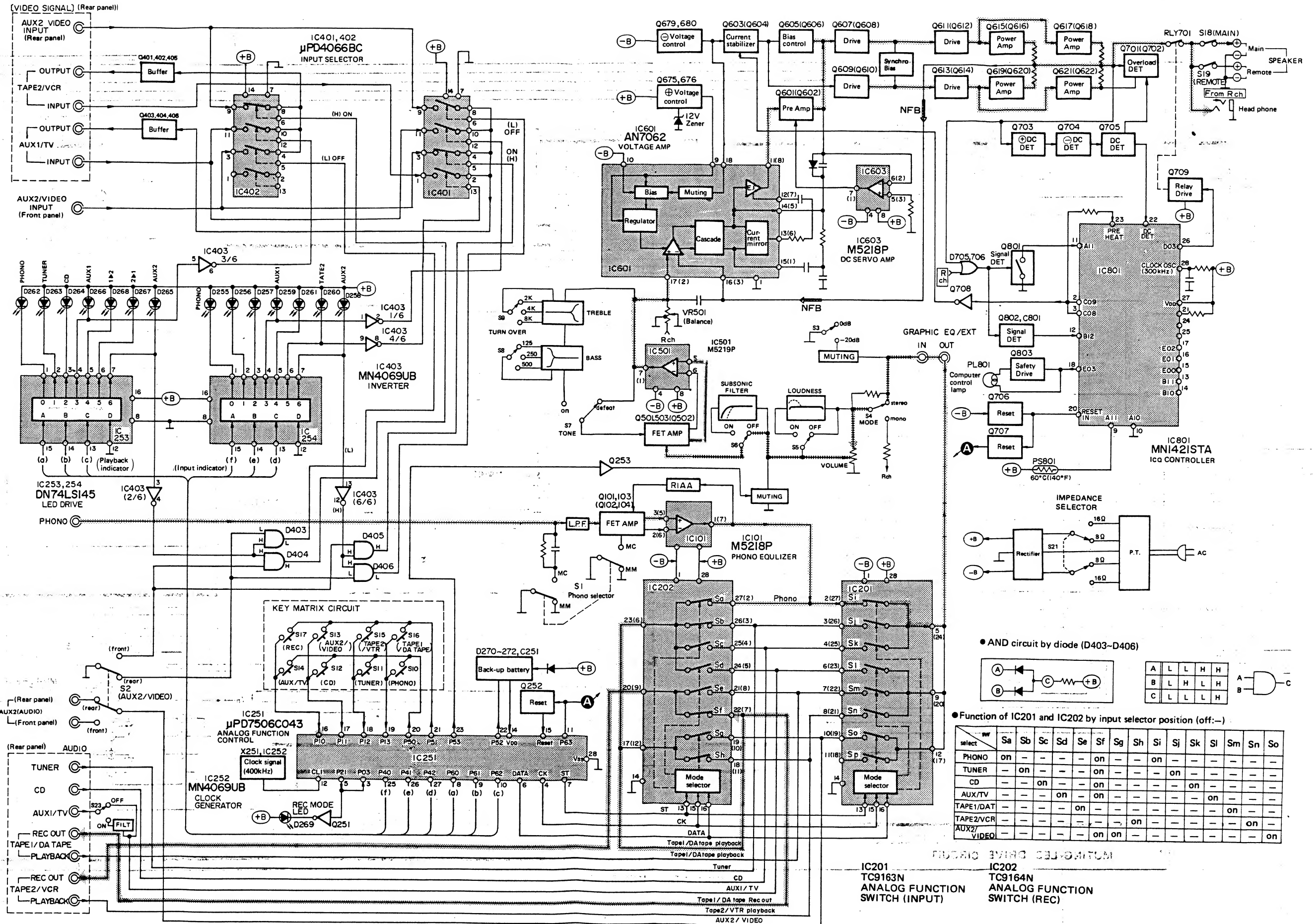


[Fig. 1]

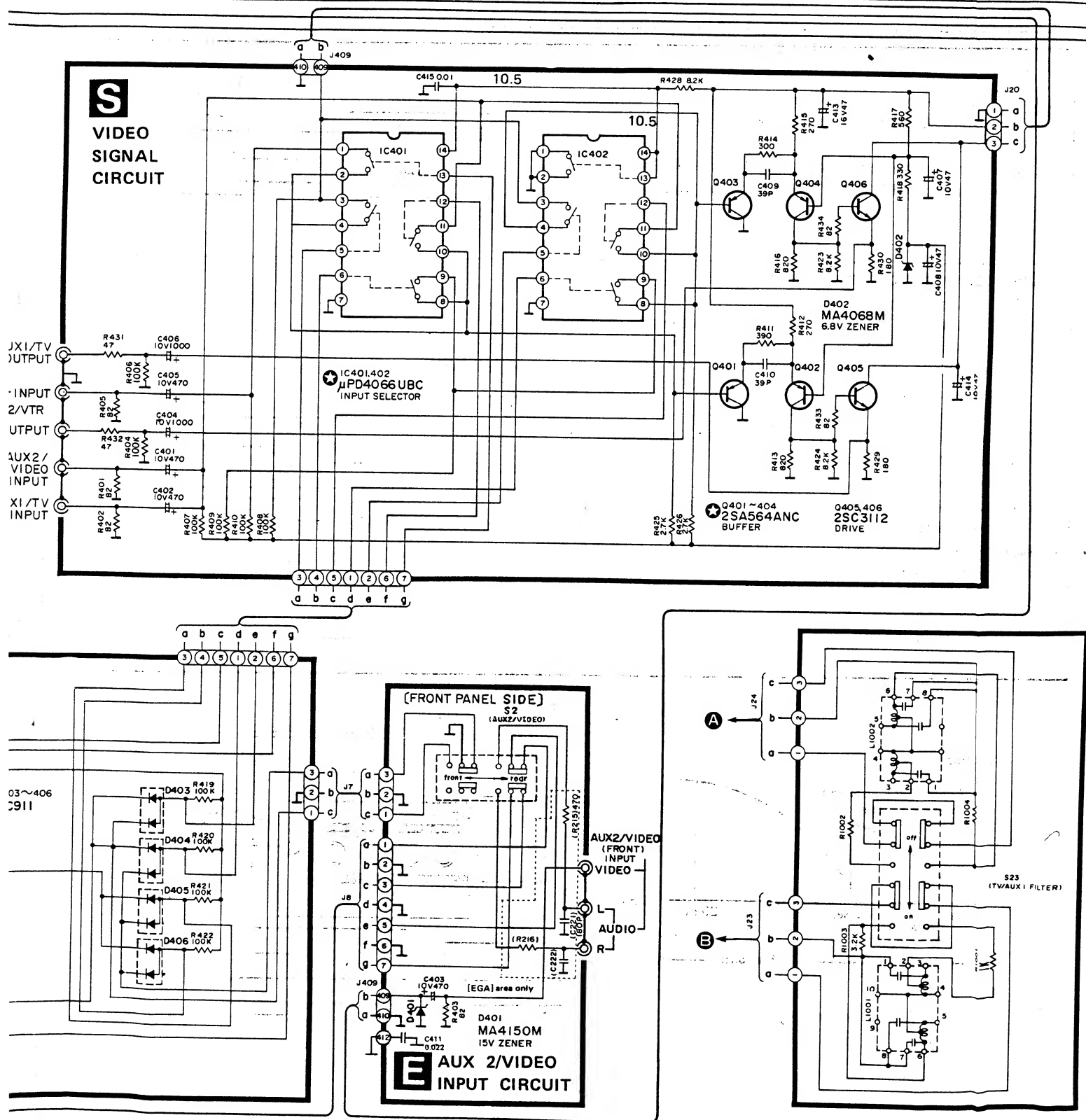
### Adjustment points

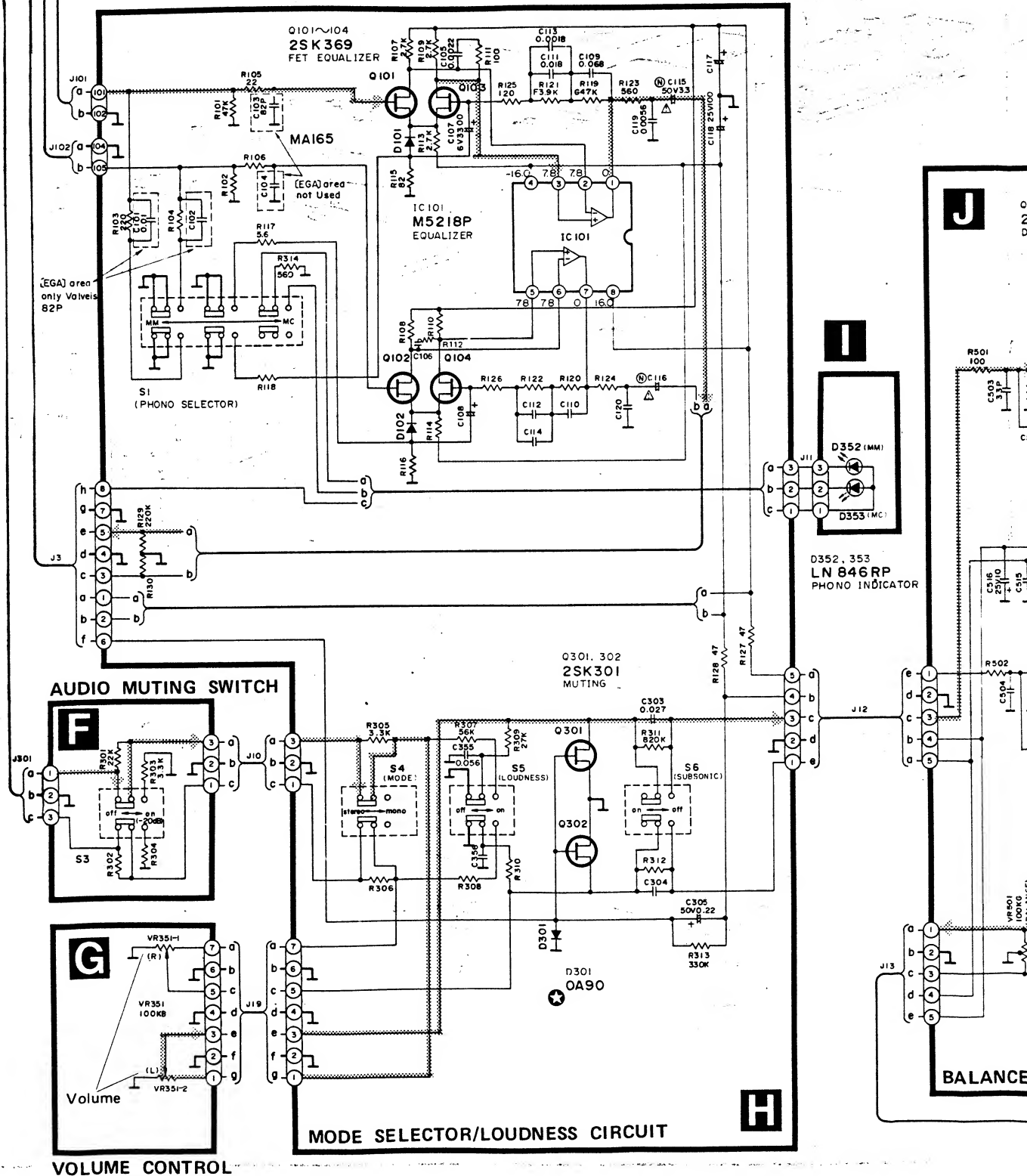


## ■ BLOCK DIAGRAM

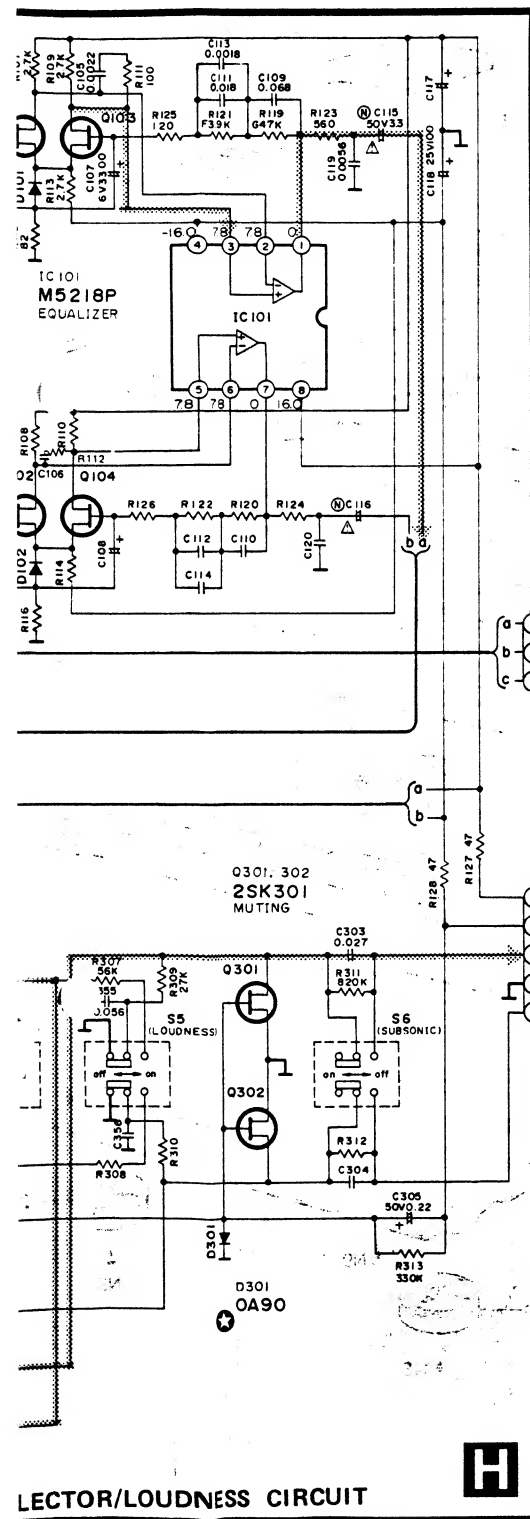




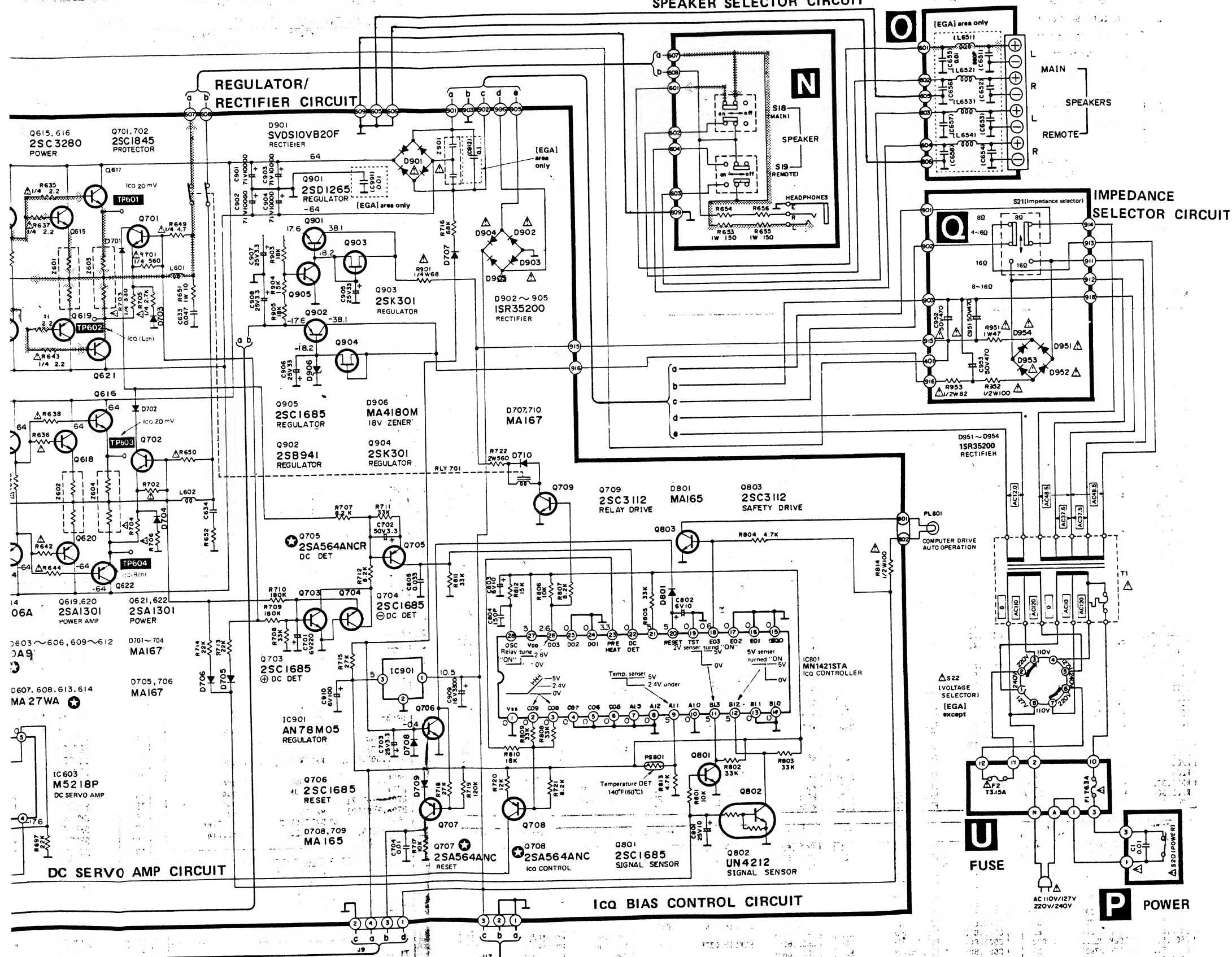
**R** TV/AUX1 INPUT CIRCUIT







## SPEAKER SELECTOR CIRCUIT

REGULATOR/  
RECTIFIER CIRCUIT

## SCHEMATIC DIAGRAM

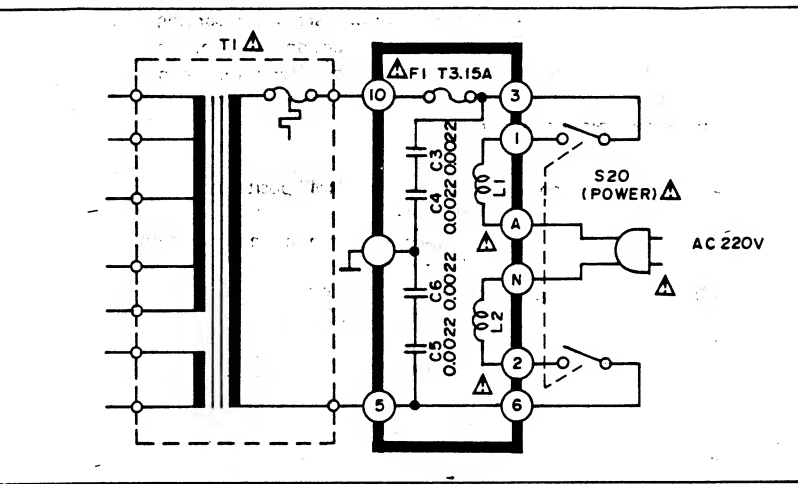
The part No. of transistors, IC and diodes mentioned in the schematic diagram stand for production part No. Regarding the part No. with  $\star$  mark, the production part No. are different from the replacement part No. Therefore, when placing an order for replacement part, please use the part No. in the replacement parts list.

- S1:** Phono selection switch in "MM" position.  
MM  $\rightarrow$  MC
  - S2:** AUX 2 / Video selection switch in "rear" position.  
front  $\rightarrow$  rear
  - S3:** Muting switch in "off" position.  
off  $\rightarrow$  on (-20dB)
  - S4:** Mode switch in "stereo" position.  
stereo  $\rightarrow$  mono
  - S5:** Loudness switch in "off" position.  
off  $\rightarrow$  on
  - S6:** Subsonic switch in "off" position.  
off  $\rightarrow$  -20Hz
  - S7-1, 7-2:** Tone control switch in "on" position.  
tone on  $\rightarrow$  defeat
  - S8:** Bass turnover switch in "500Hz" position.  
500Hz  $\rightarrow$  250Hz  $\rightarrow$  125Hz
  - S9:** Treble turnover switch in "8kHz" position.  
8kHz  $\rightarrow$  4kHz  $\rightarrow$  2kHz
  - S10-S17:** Input selection switch  
S10: Phono, S11: tuner, S12: CD,  
S13: AUX 2 / Video, S14: AUX 1 / TV,  
S15: TAPE 2 / VCR,  
S16: TAPE 1 / DA TAPE, S17: REC mode
  - S18:** Main speaker switch in "on" position.  
on  $\rightarrow$  off
  - S19:** Remote speaker switch in "off" position.  
on  $\rightarrow$  off
  - S20:** Power switch in "on" position.
  - S21:** Impedance selection switch in "4 ~ 6 $\Omega$  / 8 $\Omega$ " position.  
4 ~ 6 $\Omega$   $\rightarrow$  8 ~ 16 $\Omega$   
8 $\Omega$   $\rightarrow$  16 $\Omega$
  - S22 (Except for [EGA]):** Voltage selector switch "220V" position.  
127  $\rightarrow$  110V  $\rightarrow$  220V  $\rightarrow$  240V
  - S23:** TV/AUX 1 input filter switch in "on(TV)" position.  
off  $\rightarrow$  on(TV)
- Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
18.  $\text{Phono signal (Lch)}$
19.  $\text{Positive voltage lines or Negative voltage lines.}$
20. Important safety notice:  
Components identified by  $\Delta$  mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

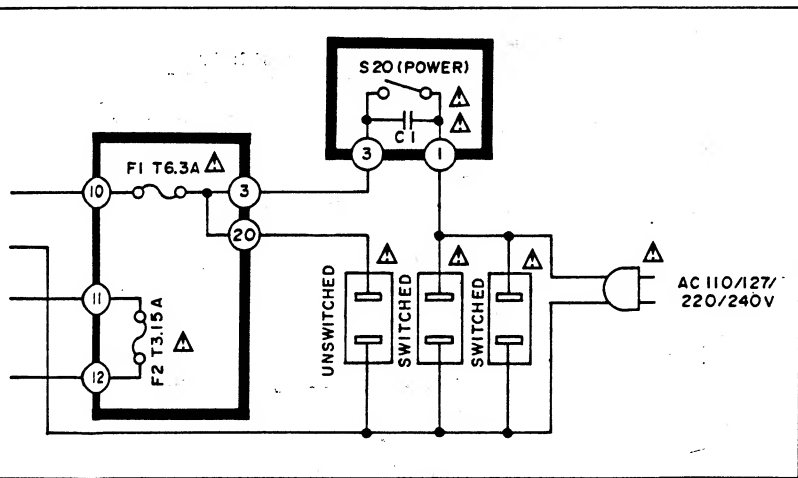


CIRCUITS TO BE CHANGED AND THE AREA

[EGA] area



[XA] area



REPLACEMENT PARTS LIST

- Notes: 1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. Important safety notice: Components identified by  $\Delta$  mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
3. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.
4. The "S" mark is service standard parts and may differ from production parts.
5. The unit of resistance is OHM ( $\Omega$ ).  
K = 1000 $\Omega$ , M = 1000K $\Omega$
6. The unit of capacitance is MICROFARAD ( $\mu$ F).  
P = 10<sup>-6</sup>  $\mu$ F
7. The parenthesized numbers in the column of description stand for the quantity per set.

Resistor Type	Wattage	Tolerance
ERD: Carbon	10: 1/8W	J: $\pm$ 5%
ERG: Metal Oxide	25: 1/4W	G: $\pm$ 2%
ERC: Solid	S2: 1/4W	K: $\pm$ 10%
	S1: 1/2W	
	12: 1/2W	

Capacitor Type	ECEA Type	Other	Tolerance
ECEA...N: Non-polar Electrolytic	2R3: 2.3V	05: 50V DC	C: $\pm$ 0.25pF
ECEA...E: Electrolytic	DC	1H: 50V DC	J: $\pm$ 5%
ECCD: Ceramic	0J: 6.3V	1H: 125V DC	K: $\pm$ 10%
ECKD: Ceramic	1C: 16V	2H: 500V DC	Z: +80%, -20%
ECOM: Polyester	1E: 25V	DKC: 125V AC	M: $\pm$ 20%
ECQV: Polyester	1V: 35V		
ECQP: Polypropylene	1H: 50V		
EECW: Liquid electrolyte	50: 50V		
ECKF: Ceramic	25: 25V		
	2A: 100V		

RESISTORS AND CAPACITORS

Ref.No.	Part No.	Value	Ref.No.	Part No.	Value	Ref.No.	Part No.	Value	Ref.No.	Part No.	Value
R101, 102	ERDS2TJ473	47K	R307, 308	ERDS2TJ563	56K	R577, 578	ERDS2TJ391	39K	R687	ERDS2FJ472	4.7K
R103, 104	ERDS2TJ221	22K	R309, 310	ERDS2TJ273	27K	R579, 580	ERDS2TJ824	82K	R691, 692	ERDS2TJ124	120K
R105, 106	ERDS2TJ220	22K	R311, 312	ERDS2TJ824	82K	R581, 582	ERDS2TJ824	82K	R693, 694	ERDS2TJ223	22K
R107, 108	ERDS2TKG2701	2.7K	R313	ERDS2TJ334	330K	R583, 584	ERDS2TJ824	82K	R695, 696	ERDS2TJ273	27K
R109, 110	ERDS2TKG2701	2.7K	R314	ERDS2TJ561	56K	R585, 586	ERDS2TJ824	82K	R697	ERDS2TJ223	22K
R111, 112	ERDS2TJ101	10K	R351	ERDS2TJ477	4.7K	R587, 588	ERDS2TJ824	82K	R701, 702	ERDS2FJ561	56K
R113, 114	ERDS2TJ272	2.7K	R352	ERG2ANJ471	47K	R589, 590	ERDS2TJ824	82K	R703, 704	ERDS2FJ331	33K
R115, 116	ERDS2TJ820	82K	R401, 402	ERDS2TJ820	82K	R591, 592	ERDS2TJ824	82K	R705, 706	ERDS2FJ272	2.7K
R117, 118	ERDS2TJ566	5.6K	R403	ERDS2TJ820	82K	R593, 594	ERDS2TJ824	82K	R707	ERDS2TJ822	8.2K
R119, 120	ERDS2TJ473	47K	R404	ERDS2TJ561	56K	R595	ERDS2TJ561	56K	R708	ERDS2TJ333	33K
R121, 122	ERDS2TJ392	3.9K	R405	ERDS2TJ820	82K	R601, 602	ERDS2TJ102	10K	R709, 710	ERDS2TJ184	18K
R123, 124	ERDS2TJ561	56K	R406, 407	ERDS2TJ104	100K	R603, 604	ERDS2TJ124	120K	R711	ERDS2TJ333	33K
R125, 126	ERDS2TJ121	12K	R408, 409	ERDS2TJ104	100K	R605, 606	ERDS2TJ821	82K	R712	ERDS2TJ822	8.2K
R127, 128	ERDS2TJ470	47K	R410	ERDS2TJ104	100K	R607, 608	ERDS2TJ103	10K	R713, 714	ERDS2TJ223	22K
R129, 130	ERDS2TJ224	220K	R411	ERDS2TJ391	39K	R609, 610	ERDS2FJ820	82K	R715	ERDS2TJ273	27K
R203, 204	ERDS2TJ471	47K	R412	ERDS2TJ271	27K	R611, 612	ERDS2TKG1203	120K	R716	ERDS2TJ683	68K
[EGA] only			R413	ERDS2TJ821	82K	R613, 614	ERDS2TJ392	3.9K	R717	ERDS2TJ103	10K
R205, 206	ERDS2TJ471	47K	R414	ERDS2TJ391	39K	R615, 616	ERDS2FJ472	4.7K	R718	ERDS2TJ273	27K
[EGA] only			R415	ERDS2TJ271	27K	R617, 618	ERDS2TJ272	2.7K	R719	ERDS2TJ124	120K
R207, 208	ERDS2TJ471	47K	R416	ERDS2TJ821	82K	R619, 620	ERDS2TJ681	68K	R720	ERDS2TJ123	12K
[EGA] only			R417	ERDS2TJ561	56K	R623, 624	ERDS2FJ102	10K	R721	ERDS2TJ822	8.2K
R209, 210	ERDS2TJ471	47K	R418	ERDS2TJ331	33K	R625, 626	ERDS2TJ823	82K	R722	ERG2ANJ681	68K
[EGA] only			R419, 420	ERDS2TJ104	100K	R627, 628	ERDS2TJ474	47K	R801	ERDS2TJ103	10K
R211, 212	ERDS2TJ471	47K	R421, 422	ERDS2TJ104	100K	R629, 630	ERDS2TJ474	47K	R802, 803	ERDS2TJ333	33K
[EGA] only			R423, 424	ERDS2TJ822	8.2K	R635, 636	ERDS2FJ272	2.7K	R804	ERDS2TJ472	4.7K
R213, 214	ERDS2TJ471	47K	R425, 426	ERDS2FJ272	2.7K	R637, 638	ERDS2FJ272	2.7K	R805	ERDS2TJ333	33K
[EGA] only			R428	ERDS2TJ822	8.2K	R639, 640	ERDS2FJ561	56K	R806	ERDS2TJ103	10K
R215, 216	ERDS2TJ471	47K	R429, 430	ERDS2TJ181	18K	R641, 642	ERDS2FJ272	2.7K	R807	ERDS2TJ822	8.2K
[EGA] only			R431, 432	ERDS2TJ470	47K	R643, 644	ERDS2FJ272	2.7K	R808, 809	ERDS2TJ333	33K
R217, 218	ERDS2TJ471	47K	R433, 434	ERDS2TJ820	82K	R649, 650	ERDS2FJ477	4.7K	R810	ERDS2TJ183	18K
[EGA] only			R501, 502	ERDS2TJ101	10K	R651, 652	ERGI1ANJ100	10K	R811	ERDS2TJ333	33K
R251, 252	ERDS2TJ104	100K	R503, 504	ERDS2TJ224	220K	R653, 654	ERGI1ANJ151	15K	R812	ERDS2TJ153	15K
R253, 254	ERDS2TJ104	100K	R505, 506	ERDS2TJ472	4.7K	R655, 656	ERGI1ANJ151	15K	R813	ERDS2TJ472	4.7K
R255, 256	ERDS2TJ101	10K	R507, 508	ERDS2TJ472	4.7K	R675	ERDS2FJ392	3.9K	R814	ERDS2FJ330	33K
R257	ERDS2TJ101	10K	R509, 510	ERDS2TJ221	22K	R676	ERDS2TJ822	8.2K	R901	ERDS2FJ101	10K
R258	ERDS2TJ221	22K	R511, 512	ERDS2TJ472	4.7K	R677	ERDS2TJ473	4.7K	R903	ERDS2TJ183	18K
R259	ERDS2TJ472	4.7K	R513, 514	ERDS2TJ224	220K	R678	ERDS2FJ472	4.7K	R904	ERDS2TJ152	1.5K
R260	ERDS2TJ473	47K	R525, 526	ERDS2TJ562	5.6K	R679	ERDS2FJ221	22K	R905	ERDS2TJ183	18K
R261	ERDS2TJ472	4.7K	R527, 528	ERDS2TJ102	10K	R680	ERDS2TJ104	100K	R951	ERG1ANJ220	22K
R262	ERDS2TJ824	820K	R529, 530	ERDS2TJ223	22K	R681	ERDS2TJ223	22K	R952	ERDS1FJ101	10K
R263	ERDS2TJ101	10K	R533, 534	ERDS2TJ392	3.9K	R682	ERDS2TJ391	39K	R953	ERDS1FJ820	82K
R264	ERDS2TJ221	22K	R535, 536	ERDS2TJ273	27K	R683	ERDS2TJ123	12K	R1001, 1002	ERDS2TJ102	10K
R301, 302	ERDS2TJ223	22K	R545, 546	ERDS2TJ272	2.7K	R685	ERDS2TJ333	33K	R1003, 1004	ERDS2TJ332	3.3K
R303, 304	ERDS2TJ332	3.3K	R575, 576	ERDS2TJ222	2.2K	R686	ERDS2FJ221	22K			
R305, 306	ERDS2TJ332	3.3K									
C1	ECCKDK103PF2	0.01	C213, 214	ECCD1H181K	180P	C627, 628	ECCKD1H681K	680P	C702	ECEA1H333	3.3
[EGA] except			[EGA] only			C629, 630	ECCKD2H820K	82P	C703	ECEA1H333	3.3
C3, 4	ECCKDK222MF2	0.0022	C215, 216	ECCD1H181K	180P	C631, 632	ECCKD2H270K	27P	C704	ECCKD1H103ZF	0.01
[EGA] only			[EGA] only			C633, 634	ECCKD1H473JZ	0.047	C801	ECEA1U100	10
C5, 6	ECCKDK222MF2	0.0022	C217, 218	ECCD1H181K	180P	C635	ECCKD1H102MD	0.01	C802, 803	ECEA1U100	10
[EGA] only			[EGA] only			C636	ECCKD1H102MD	0.01	C804	ECCKD1H151K	150P
C101, 102	ECCKD1H820K	82P	C219, 220	ECCD1H181K	180P	C638	ECCKD1H102MD	0.01	C805	ECCKD1H333ZF	0.033
[EGA] only			[EGA] only			C639	ECCKD1H102MD	0.01	C901, 902	ECCT71R103Y	10000
C101, 102	ECCKD1H103ZF	0.01	C221, 222	ECCD1H181K	180P	C651, 652	ECCKD1H681K	680P	C903, 904	ECCT71R103Y	10000
[other]			[EGA] only			C653, 654	ECCKD1H681K	680P	C905, 906	ECEA1U330	33
C103, 104	ECCKD1H820K	82P	C223, 224	ECCD1H820K	82P	C655, 656	ECCKD1H103ZF	0.01	C907, 908	ECEA1U330	33
[EGA] except			[EGA] only			C657, 658	ECCKD1H103ZF	0.01	C909	ECEA1U332	3300
C105, 106	ECCKD1H222JZ	0.0022	C251	EECV2R3A3R3E	3.3F	C659, 660	ECCKD1H103ZF	0.01	C910	ECEA1U332	3300
C107, 108	ECEA1U332	3300	C253	ECCKD1H102MD	0.001	C661, 662	ECCKD1H103ZF	0.01	C912	ECEA1U332	3300
C109, 110	ECCKD1H683JZ	0.068	C254	ECCKD1H471K	470P	C663, 664	ECCKD1H103ZF	0.01	C913	ECEA1U332	3300
C111, 112	ECCKD1H183JZ	0.018	C255	ECCKD1H471K	470P	C665, 666	ECCKD1H103ZF	0.01	C914	ECEA1U332	3300
C113, 114	ECCKD1H183JZ	0.018	C256	ECCKD1H471K	470P	C667, 668	ECCKD1H103ZF	0.01	C915	ECEA1U332	3300
C115, 116	ECCKD1H183JZ	0.018	C257	ECCKD1H471K	470P	C669, 670	ECCKD1H103ZF	0.01	C916	ECEA1U332	3300
C117, 118	ECEA1U101	100	C258	ECEA1U100	10	C671, 672	ECCKD1H103ZF	0.01	C917	ECEA1U332	3300
C119, 120	ECCKD1H562JZ	0.0056	C303, 304	ECCKD1H330K	33P	C673, 674	ECCKD1H103ZF	0.01	C918	ECEA1U332	3300
C201	ECCKD1H103ZF	0.01	C305	ECEA1U470	47	C675	ECEA1U332	3.3	C919	ECEA1U332	3300
C203, 204	ECCKD1H333ZF	0.033	C351, 352	ECEA1U470	47	C676	ECEA1U332	3.3	C920	ECEA1U332	3300
C209, 210	ECCD1H181K	180P	C353, 354	ECCD1H121K	120P	C677	ECEA1U332	3.3	C921	ECEA1U332	3300
[EGA] only			C355, 356	ECCKD1H563JZ	0.056	C678	ECEA1U332	3.3	C922	ECEA1U332	3300
C401, 402	ECEA1U471	470	C357	ECEA1U470	47	C679, 680	ECEA1U332	3.3	C923	ECEA1U332	3300
C403	ECEA1U471	470	C401, 402	ECEA1U471	470	C681, 682	ECEA1U332	3.3	C924	ECEA1U332	3300
C404	ECEA1U102	1000	C403	ECEA1U471	470	C683, 684	ECEA1U332	3.3	C925	ECEA1U332	3300
			C404	ECEA1U102	1000	C685, 686	ECEA1U332	3.3	C926	ECEA1U332	3300
						C687, 688	ECEA1U332	3.3	C927	ECEA1U332	3300
						C689, 690	ECEA1U332	3.3	C928	ECEA1U332	3300
						C691, 692	ECEA1U332	3.3	C929	ECEA1U332	3300
						C693, 694	ECEA1U332	3.3	C930	ECEA1U332	3300
						C695, 696	ECEA1U332	3.3	C931	ECEA1U332	3300
						C697, 698	ECEA1U332	3.3	C932	ECEA1U332	3300
						C699, 700	ECEA1U332	3.3	C933	ECEA1U332	3300
						C701	ECEA1U332	220	C934	ECEA1U332	3300

Ref.No.	Part No.	Description
INTEGRATED CIRCUITS		
IC101	M5218P	Integrated Circuit
IC201	TC9163N	Integrated Circuit
IC202	TC9164N	Integrated Circuit
IC251	UPD7506C043	Integrated Circuit
IC252, 403	MN4089UB	Integrated Circuit
IC253, 254	DN74LS145	Integrated Circuit
IC401, 402	UPD4066BC	Integrated Circuit
IC501	M5219P	Integrated Circuit
IC601	AN7062	Integrated Circuit
IC603	M5218P	Integrated Circuit
IC801	MN1421STA	Integrated Circuit
IC901	AN78M05	Integrated Circuit
TRANSISTORS		
Q101~104	2SK369-GR	Transistor
Q251, 252	UN4211	Transistor
Q253	2SA722-S	Transistor
Q301, 302, 352	2SK301-S	Transistor
Q351	2SD1265-0	Transistor</

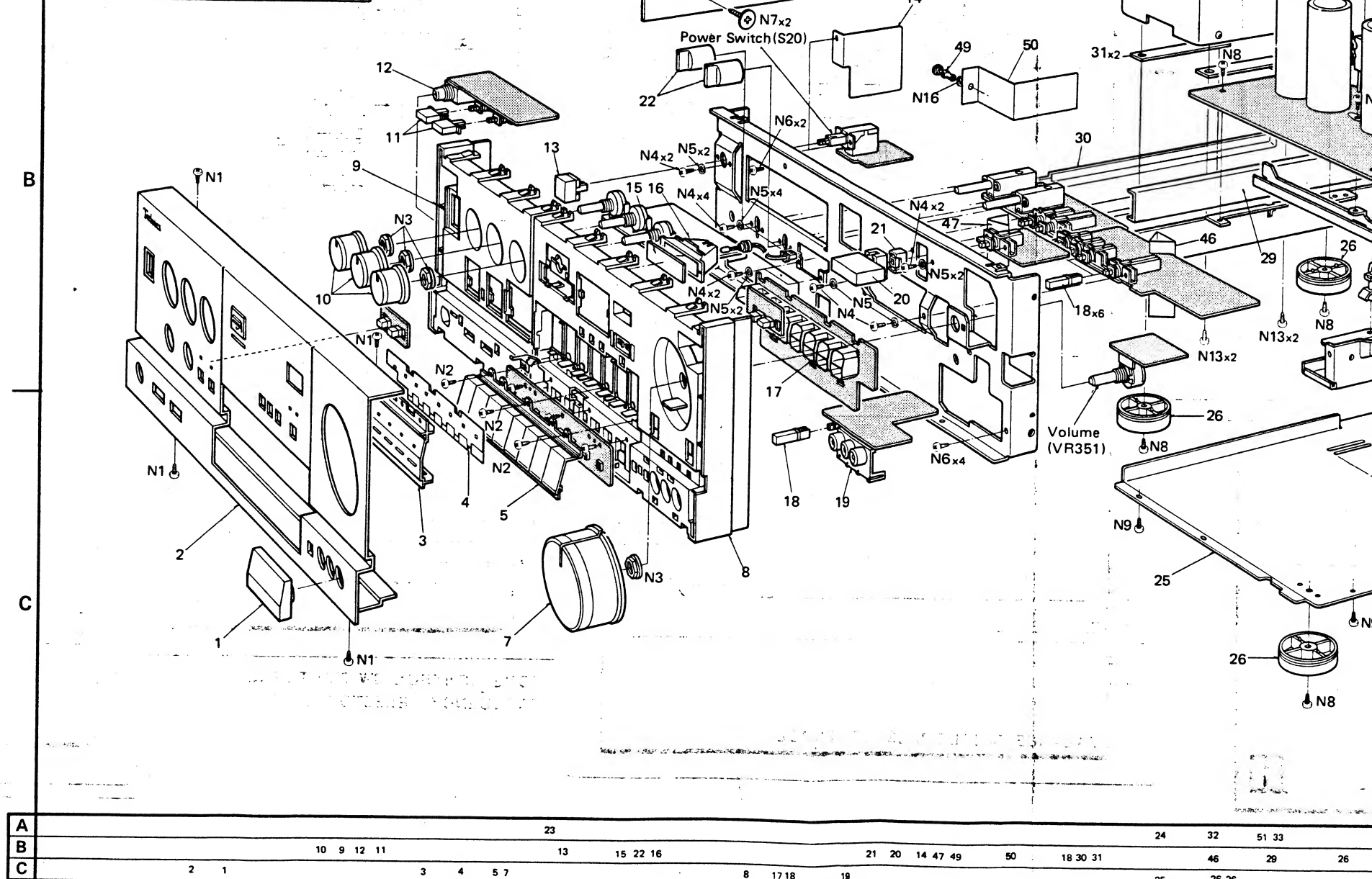
## EXPLODED VIEW

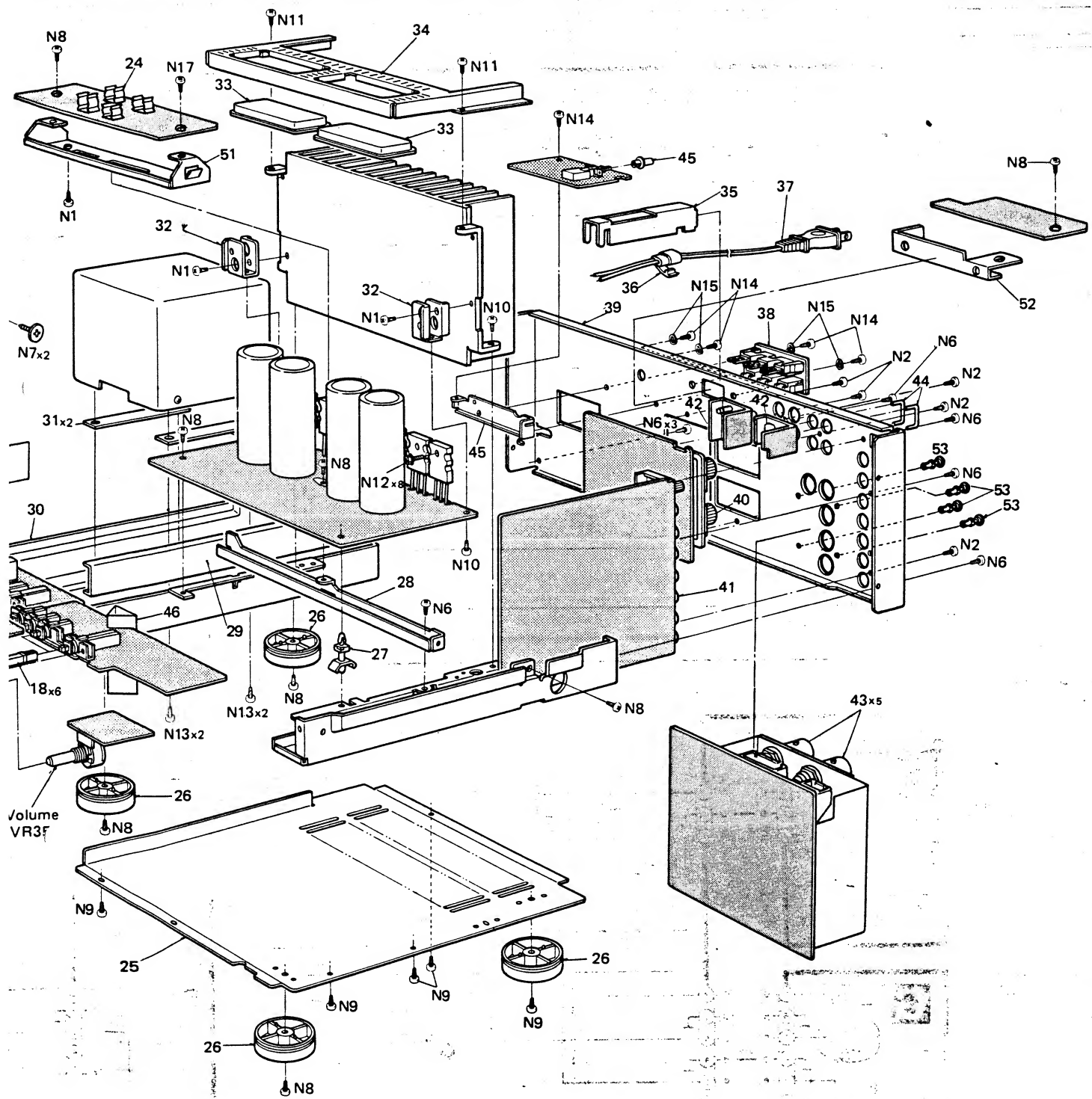
Ref. No.	Part No.	Description
CRYSTAL		
X251	SVFCSB400P-M	Crystal
VARIABLE RESISTORS		
VR351	EVJKA054B15	Volume, 100k $\Omega$ (B)
VR501	EVHFA002G15	Balance, 100k $\Omega$ (G)
VR502, 503	EVCEXA000C15	Tone, 100k $\Omega$ (C)
VR601, 602	EVNKA0A00B13	ICQ Adj, 1k $\Omega$ (B)
COMPONENT COMBINATIONS		
Z401	EXBP85223K	22k $\Omega$
Z601~604	ERF3GBKR22N	0.22 $\Omega$ ( $\times 2$ )
Z901	$\Delta$ SXRF5203ZSM	0.01 $\mu$ F ( $\times 2$ )
[EGA] except		
THERMISTERS		
TH601, 602	ERTD2ZHL103S	Thermistor, 10k $\Omega$
RELAY		
RLY701	$\Delta$ SSY124	Speaker
THERMAL DETECTOR		
PS801	SRPBG47101	Posistor
LAMP		
PL801	XAMS12S500	Safety Ind.
FUSE		
F1 [EX]	$\Delta$ XBA2C63TB0	250V, T 6.3A
F1 [EGA]	$\Delta$ XBA2C31TR0	250V, T 3.15A
F1 [other]	$\Delta$ XBA2C63TR0	250V, T 6.3A
F2 [EX]	$\Delta$ XBA2C31TB0	250V, T 3.15A
F2 [EGA]	$\Delta$ XBA2C31TR0	250V, T 3.15A
except		
SWITCHES		
S1, 4~6	SSH486	Phono Selector, Mode, Loudness, Filter
S2	SSH1183	Aux2
S3	SSH1184	Muting
S7	SSH2090	Tone Control
S8, 9	SSR225	Turnover
S10~17	SSG13	Frequency
S18, 19	SSH2089	Input Selector
S20 [EGA]	$\Delta$ ESB90227S	Power Source
S20 [other]	$\Delta$ SSH1109	Power Source
S21	$\Delta$ SSH1158	Impedance Selector
S22 [EGA]	$\Delta$ ESE37262	Voltage seletor
except		
S23	RSS42A	Filter

Ref. No.	Part No.	Description
CABINET and CHASSIS PARTS		
1	SGE1720	Terminal Cover (1)
2	SGWUV10X-KM	Front Panel Ass'y (1)
3	SGWUV10X-KM1	Indication Plate (1)
4	SDU270	Filter (1)
5	SBCUV10X-KM	Button, Input Selector (1)
6	SUS782	Spring (1)
7	SBN1192	Knob, Volume (1)
8	SGXUV10X-KN	Sub panel Ass'y (1)
9	SGXUV10X-KN1	Sub panel Ass'y (1)
10	SBN1193	Knob, Balance (3)
11	SBC439-2	Button, Speaker (2)
12	SJG638	Headphone Jack (1)
13	SBC686	Button, Power Source (1)
14	SMCUV10X-KM	Shield Cover (1)
15	SDU268	Filter, Lamp (1)
16	SMP388	Lamp Case (1)
17	SMP387-1	LED Case (1)
18	SBC719-1	Button (7)
19	SJF3061-2N	Terminal Board (1)
20	SBC708	Button, Muting (1)
21	SHR9756	Spacer (1)
22	SBN1194	Knob (2)
23 [EX]	SKCUV10X-KK	Cabinet (1)
23 [other]	SKCUV10X-KM	Cabinet (1)
24 [EGA]	SJT347	Fuse Holder (2)
24 [other]	SJT347	Fuse Holder (4)
25	SKU8990-5	Bottom Board (1)

Ref. No.	Part No.	Description
CABINET and CHASSIS PARTS		
26	SKL295	Foot (4)
27	SHR9755	Holder (1)
28	SUWUV10X-KM	Bracket (1)
29	SUW2910-1	Bracket (1)
30	SML107-12	Bracket, Power Transformer (1)
31	SHG6355	Rubber, Power Transformer (2)
32	SUW2909	Bracket (1)
33	SHG1635	Rubber (2)
34	SMM1953	Bracket (1)
35	SUW2915	Bracket (1)
36 [EX]	SHR129	Bushing, AC Cord (1)
36 [other]	SHR127	Bushing, AC Cord (1)
37 [EV, XA]	$\Delta$ SJA111	AC Cord (1)
37 [EX]	$\Delta$ QFC1205M	AC Cord (1)
37 [XL]	$\Delta$ RJA79ZA	AC Cord (1)
37 [other]	$\Delta$ SJA97	AC Cord (1)
38 [XA]	$\Delta$ SJS601-3 only	AC Outlet (1)
39 [D]	SGP6390-7A	Rear Panel (1)
39 [EGA]	SGP6390-8A	Rear Panel (1)
39 [XA]	SGP6390-9A	Rear Panel (1)
39 [EX]	SGPUV10X-KK	Rear Panel (1)
39 [other]	SGPUV10X-KF	Rear Panel (1)
40	SJF4817	Terminal Board, Speaker (1)
41	SJF3059N	Terminal Board (1)
42	SJF3057N	Terminal Board (2)
43	SJS104	Socket (5)
44	SJP9205-2	Pin (2)
45	SBC165	Button (1)
46	SHR9766	Holder (1)
47	SHR9767	Holder (1)
48	SUW2951	Bracket (1)
49	SHR401-1	Look Pin (1)
50	SMC1206	Shield Plate (1)
51	SUW2828	Bracket (1)
52	SUW2952	Bracket (1)
53	SHR401-1	Look Pin (4)
SCREWS, NUT and WASHERS		
N1	XTB3-8JFZ	Tapping, $\phi 3 \times 8$ (7)
N2	XTB3-8GFZ	Tapping, $\phi 3 \times 8$ (6)
N3	SNE4021	Nut (4)
N4	$\phi$ XSN3-6BVS	$\phi 3 \times 6$ (12)
N5	$\phi$ XVA38FZ	Washer, $\phi 3$ (12)
N6	XTB3-8JFZ1	Tapping with Detent, $\phi 3 \times 8$ (15)
N7	SNE2095-5	Cabinet (6)
N8	XTV3-8T	Tapping with Washer, $\phi 3 \times 8$ (10)
N9	XTB3-8BFR1	Tapping with Detent, $\phi 3 \times 8$ (4)
N10	XTV3-8TFR	Tapping with Washer, $\phi 3 \times 8$ (4)
N11	XTV3-8TFZ	Tapping with Washer, $\phi 3 \times 8$ (2)
N12	SNE2117-1	Transistor (8)
N13	XTB4-8F	Tapping, $\phi 4 \times 8$ (4)
N14	$\phi$ XSN3-6BVS	Tapping, $\phi 3 \times 6$ (4)
N15	$\phi$ XVA38FZ	Washer, $\phi 3$ (4)
N16	SHW40L150	Washer (1)
N17 [EGA]	XTB3-8JFZ1	Tapping with Detent, $\phi 3 \times 8$ (1)
N17 [other]	XTV3-8T	Tapping with Washer, $\phi 3 \times 8$ (1)

Ref. No.	Part No.	Description
<b>ACCESSORIES</b>		
A1 [XA]	SQF12429	Instruction Book (1)
A1 [EGA]	SQF12430	Instruction Book (1)
A1 [other]	SQF12428	Instruction Book (1)
A2	SKL281-1	Foot (2)
A3	SHV39K50	Washer (2)
A4	XTB3-14J	Tapping Screw, $\phi 3 \times 14$ Plug (2)
A6 [XA]	$\Delta$ SJP5213-1	only (1)
A7 [XA]	$\Delta$ SJP5215	only Plug (1)
<b>PACKING PARTS</b>		
P1 [EV, XA]	SPG5334	Carton Box (1)
P1 [EP]	SPG5337	Carton Box (1)
P1 [EX]	SPG5338	Carton Box (1)
P1 [other]	SPG5336	Carton Box (1)
P2 [EV, EX, XA]	SPS4553-1	Pad, Left (1)
P2 [other]	SPS4553-3	Pad, Left (1)
P3 [EV, EX, XA]	SPS4554-1	Pad, Right (1)
P3 [other]	SPS4554-3	Pad, Right (1)
P4	SPS4488	Pad, Upper (1)
P5	SPP730	Polyethylene Bag (1)





24	32	51 33		32	34 33		39 36	45	35 38	37		52
18 30 31	46	29	26	27 28	46			42 41 40		43	44	53
25	26 26						26					